INDUSTRIAL EQUIPMENT NEWS

DECEMBER-1951
VOL. 19 • NO. 12

The Original IEN FOUNDED 1933

INDUSTRY'S MOST COMPLETE PRODUCT INFORMATION SERVICE

What's New IN EQUIPMENT, PARTS, MATERIALS

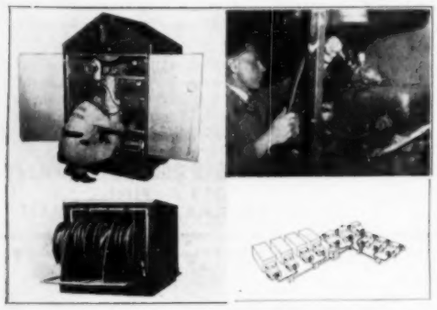
AFFILIATED WITH THOMAS REGISTER OF AMERICAN MANUFACTURERS

Product Information for specifiers and buyers in all industries

BREVITY—Identify by IEN-12134 if you write the maker

HEATING . . Oil fired equipment to protect trucks in outdoor storage

Source: VAPOR HEATING CORP.
4503 W. 16th St., Chicago 23, Ill.



Costs about $3,800

Trucks and buses that have to be stored in the open are prevented from freezing by connection to hot-water circulating lines served by this new oil-fired Parking Lot Heater. The heating equipment with its automatic controls, water storage and motor-driven circulator occupy a metal building measuring about 4 by 4 feet. Total weight is about 1,500 pounds.

Delivery and return lines lead outward through hose boxes where extension hoses are provided to connect to inlet and return fittings assembled on the truck or bus engines. Hoses that are not in use at a given time are connected in pairs between supply and return so hot water will circulate continuously through them to prevent freezing. The motor operating the circulating pump rates 1½ hp. and the pump maintains 15-lb. pressure in the circulating lines.

For automatic operation the burners will fire up when water temperature drops to 140 deg. F. and will continue to operate until the water in the circulating lines reaches 170 deg. F. Then they turn off until the temperature again drops to 140 deg. F. An alarm bell rings if the temperature should go further down to 80 deg. F. It also rings if water supply in the heater reserve tank falls to a predetermined low point.

An outside thermostat will turn the burners on when outside temperature is down to 50 deg. F. providing the circuit switch for automatic operation is in closed position. When no engines are connected to the circulating lines the heater will cycle on and off to circulate warm water through the hoses. The rating, 250,000 btu. per hour, is sufficient to protect 10 buses or 20 trucks from freezing in outdoor storage.

BREVITY—Identify by IEN-12135 if you write the maker

CARBIDE PARTS . . Based on chromium, made by compressing powdered metals

Source: CARBOLOY DEPT., GENERAL ELECTRIC CO.
11167 E. 8-Mile Road, Detroit 32, Mich.

Limited production at present time

Series 600 is a new chrome carbide in powdered form from which a range of products can be produced. Representative are gage blocks, ring gages, plug gages, gage anvils, valve balls, centrifuge blades, tool bits. The carbide contains about 70 per cent of chromium by weight. Costly, scarce tungsten and cobalt are practically eliminated.

Characteristics include resistance to abrasion and corrosion, somewhat lighter weight than tungsten carbide, coefficient of expansion approximately the same as for steel, machinability about the same as tungsten carbide, freedom from internal strain, hardness reading approximately 80 to 93 on the Rockwell A scale, greater strength than steel in compression, resistance to oxidation at temperatures to 1,800 deg. F.

Remember Your Christmas Seals

BREVITY—Identify by IEN-12136 if you write the maker

DOOR . . Inflated rubber panel to hinge in truck traffic openings

Source: STIC-KLIP MFG. CO.
48-52 Regent St., Door Division, Cambridge 40, Mass.

Windows can be added

Ability to absorb shock without damage and to bend to 45 deg., as well as hinge in the normal manner, characterizes this new hinge type of air-inflated rubber door. It is available in single and double assemblies starting at about 6 ft. in height by 2½ ft. in width for a single panel. The door shown in the illustration is double design with two panels each measuring 8½ ft. in height by about 4 ft. in width. List price for this double unit is about $450.

Construction starts with a frame made of 2-in. rubber tube covered with an outer layer on both faces of rubber-impregnated fabric. Inside the frame are 15 to 25 inflated rubber bladders manufactured particularly for the application by Dewey & Almy Chemical Company. The bladders run crosswise and are positioned between rubber spacers. They are inflated by a hand pump connecting to protruding valves.

Overall thickness is 2½ inches. Weight is about one-third that of a conventional metal-protected wood swinging door of equal size. Successful application has been made in replacement of heavy wood doors in truck openings in cold-storage warehouses. The rubber door swings open at a touch and easily absorbs shock from the trucks that pass through without troubling to open the panels ahead of time.

BREVITY—Identify by IEN-12137 if you write the maker

SEALING . . Leather packings rubber impregnated, good to 200 deg. F.

Source: E. F. HOUGHTON & CO.
301-5 W. Lehigh Ave., Philadelphia 33, Pa.

Ask for Packing Standard Book

Vim No. 1243 is a new leather packing made of mineral-tanned Vim leather impregnated with a synthetic elastomer. Bond between the leather and rubber is completed by a polymerization process in which the rubber impregnates all of the way through the leather. The resulting packing can be squeezed double in the hand. It will rebound to exact original shape prior to bending.

Characteristics include excellent sealing ability, low friction, ease of assembly, resistance to attack by oils and solvents, resistance to plastic flow or extrusion and to abrasion. Two available styles include Vee and cup sections. Sizes range from ¾ in. id. by ¾-in. od. to 15 in. id. by 60 in. od. for the Vee sections and from $\frac{7}{16}$ to 12-in. od. for the cup packing.

BREVITY—Identify by IEN-12138 if you write the maker

PAINTING . . Quick drying lacquer, pressurized spray container for touch up

Source: POWR-PAK INC.
1478-82 Barnum Ave., Bridgeport 8, Conn.

Aerosol unit

The small amount of quick-drying color lacquer required to touch up a machine that has been assembled in the field is now available in a new pressurized spray container developed by the company. Colors are to specification and, as a service to equipment manufacturers, the company has organized a color-matching department so the lacquer supplied will match exactly the original factory colors. In these cases a custom-made label is attached to each package for the manufacturer. It is intended that the required containers be shipped with each set of parts.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

PRODUCT INFORMATION IS MORE VITAL NOW THAN EVER

WHAT DO YOU NEED?

READER SERVICE FORM . . Look between pages 16 and 17 or 96 and 97 and "lift" the form you find there. Keep it beside you as you look through the pages. Note on it the numbers of the products on which you want further information. Then either mail it to us, so we can forward your requests to the manufacturers, or use it as your guide to write direct.

From a Company President

"IEN is an excellent source to keep engineering files up to date. We estimate that we probably buy 10 per cent of our shop equipment through IEN's introduction."

Departments

READER SERVICE FORM — Pages 16-17 and 96-97
To assist you in securing the information you want

SUBJECT INDEX — Pages 109-111
With our four-step suggestion on how to use it

INQUIRIES — Page 4
You can help by spotting incomplete product information

NEWS NOTES — Page 24
Reviews of unusually helpful literature and services

NEW LITERATURE — Page 76
Condensed reviews of current manufacturers' catalogs

IDEAS FOR YOU — Page 56
Items of current news interest to keep you posted

"I WISH I HAD" — Page 108
Requests we cannot answer, printed in the hope you can

Our Selections in This Issue

CONTRACT WORK — Page 14
Solder assembly of carbon and metal for specified uses

COUNTING — Page 3
Electronic equipment counts to 10 million per second

DRAFTING — Page 101
Glass cloth, dimensionally stable, for ink or pencil

GLASS — Page 56
Photosensitive material machines into intricate patterns

HEATING — Page 28
Application examples of induction heating with figures

PLATING — Page 62
Plastic stop offs mask part of work pieces to plate

PRINTING — Page 8
Dry process equipment uses heat to copy an original

PROCESSING — Page 90
Heat exchanger for pastes, powders, pulps, slurries

SOLDERING — Page 105
Electric iron with button-controlled booster element

TESTING — Page 11
Electronic instrument detects and localizes vibration

TESTING — Page 22
Contract service for field or laboratory ultrasonic work

TESTING — Page 75
Magnetic dynamometer for motors to .4 hp and 10,000 rpm.

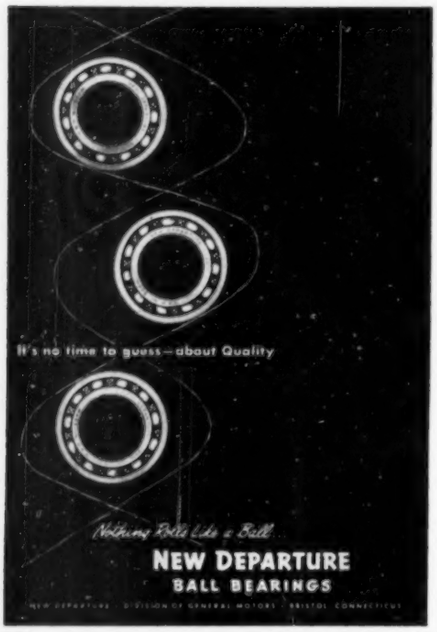
W. E. Smith, Editor & V. Pres.
F. Morr. Smith, V. Pres. in Charge

THOMAS PUBLISHING COMPANY
461 - 8th Ave., New York 1, N.Y.—LOngacre 3-1546

HELP TO CONSERVE PAPER
MAKE THIS ISSUE DO DOUBLE WORK
FILL IN AND SEND ALONG TO OTHERS
INTERESTED IN PRODUCT INFORMATION

- ☐ Plant Operating Mr. _____
- ☐ Production Mr. _____
- ☐ Engineering Mr. _____
- ☐ Product Design Mr. _____
- ☐ Purchasing Mr. _____
- ☐ _____

BREVITY—Identify by IEN - 12139 If you write the maker



BREVITY—Identify by IEN - 12140 If you write the maker

FREE! 32-PAGE HANDBOOK

SHOWS HOW TO STOP CONDENSATION DRIP

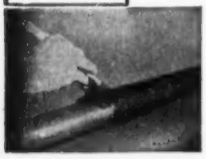
NoDrip

Stops Drip from:
- ✓ Cold water pipes
- ✓ Water filter tanks
- ✓ Metal or concrete ceilings
- ✓ Basement walls
- ✓ Condensers
- ✓ Air Ducts
- ✓ Blower pipes
- ✓ Dust Collectors
- ✓ Crystallizers

Learn how you can control condensation drip from pipes, tanks, ceilings—from metal, wood or masonry surfaces.

LOW COST — EASY TO APPLY

Anyone can apply NoDrip, the triple-duty insulation type coating. Brush it on or spray it on. Use it on pipes or equipment where temperature differences cause condensation. Save money by preventing rust and corrosion. Deaden sound, decrease vibration on metal ducts or pipes.



HANDBOOK SHOWS HOW

Send today for your copy of the NoDrip HANDBOOK which tells what this plastic-cork material can do for you. It's the modern solution to condensation drip problems.

Send for your Free Handbook Now!

J. W. MORTELL CO.

Technical Coatings Since 1895

Dept. IE, Kankakee, Ill.

BREVITY—Identify by IEN - 12141 If you write the maker

METAL CONSERVATION and INSTRUMENT PROTECTION with RIGIDIZED METAL CASES

The 3-DIMENSIONAL METAL with GREATER STRENGTH and LONGER LIFE

To protect delicate Voltage Stabilizing equipment, the Doelcam Corporation, Newton, Mass., used three-dimensional design-strengthened, textured Rigidized Metals for its covers and panels. Increased flexural rigidity—which permits gage reductions for metal conservation—and resistance to both shock and damage make this exclusively manufactured metal a perfect material for applications where high strength, light weight and rugged surfaces are essential. Be sure you investigate Rigidized Metals thoroughly before selecting materials for your product designs.

Pattern S-WL used on Doelcam Voltage Stabilizers

WRITE on your company letterhead for a copy of the RIGIDIZED METALS CONSERVATION HANDBOOK today

Rigidized Metals Corporation

66412 OHIO STREET, BUFFALO 3, N. Y.

Offices in Principal Cities in the U. S. and Canada

U. S. & Foreign Patents

BREVITY—Identify by IEN - 12142 If you write the maker

COUNTING . . Electronic equipment rates to 10 million counts per second

Source: HEWLETT-PACKARD CO.
2322-P Page Mill Rd., Palo Alto, Calif.

Lists at $2,000

Model 524A is a new frequency counter into which an unknown frequency is connected directly through a wide-band squaring amplifier assembled in the housing. The amplifier connects to a fast gate controlled by a time-base generator. When the gate is opened, the unknown is applied to the counting circuits. When the gate is closed, the counting circuits remember and display the count.

Frequencies above 300 cycles per second are counted and displayed directly on the front panel. A switch on this panel can be set to select in one of five counting intervals at an exact duration of 10, 1, 0.1, 0.01, and 0.001 second. The instrument counts the cycles during this interval and then displays for an equal length of time in repeating operation when set "automatic". The count can be held for any desired length of time by pressing a "manual" button. For low-frequency the instrument measures a period or duration of a cycle in microseconds basing on a 10-cycle sample.

A feature of the instrument lies in the use of meters for the first two digits so frequency trend as well as the actual count can be observed. Operation is on 110-volt 50/60-cycle ac. with input at 400 watts. Dimensions are about 22 by 14 by 28 inches.

BREVITY—Identify by IEN - 12143 If you write the maker

WEIGHING . . Pneumatic scale reads weight or force at pressure gage

Source: FLUID CONTROLS CO.
5150 Ridge Ave., Dept. I, Philadelphia 28, Pa.

Ask for Catalog 100-A

A load such as a weight, or a force action as from the brake arm of a dynamometer, imposed on the table at the top of this new Air Scale is balanced by air pressure acting beneath diaphragms in the scale housing. A bleeder valve rides the load or the force on the air. A pressure gage connected to the weighing chamber can be calibrated to show the load in pounds or other factor.

Net weight is provided at the reading by employing multiple diaphragms in the housing so a net-weight chamber and a tare-weight chamber are combined. The latter can be set for a known tare by positioning a valve from a regulated air-pressure supply line entering the side of the housing.

Twelve sizes in the line, including special units available to order, have load capacities to 40 ton. An assembly rating 5 ton will fit inside a 1-ft. cube. Total movement of the load table is restricted to ¾ inch. The mechanism is free from loss of motion and is practically frictionless.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 12144 If you write the maker

DUFF-NORTON
Traversing Bases

Heavy machinery and equipment can be shifted with ease by means of Duff-Norton Traversing Bases. Used with or without screw and ratchet type jacks, loads can be moved horizontally up to 26". You should have a set of these bases in your plant. Investigate the savings they make possible.

HOLDS AND MOVES LOADS UP TO 100 TONS

IN EITHER DIRECTION

Write today for Bulletin AD-4G.

THE DUFF-NORTON MANUFACTURING CO.

Main Plant and General Offices: PITTSBURGH 30, PA.—Canadian Plant: TORONTO 6, ONT.

"The House that Jacks Built"

BREVITY—Identify by IEN - 12145 If you write the maker

ANNOUNCING Atlas CLAUSING

12" LATHES – 6300 SERIES

★ 1" Collet Capacity, 1⅜" Bore
★ A.S.A.-L-00 Tapered Key Drive Spindle ★ Timken Bearings

CLAUSING — a name highly respected for years in thousands of plants — is now a division of Atlas. Atlas-Clausing will continue with the advanced features that have made the Clausing lathe's excellent reputation. Send for catalog and complete details.

ATLAS PRESS COMPANY
1223 N. Pitcher St.
KALAMAZOO, MICHIGAN

BREVITY—Identify by IEN - 12146 If you write the maker

Quick as a

FLASH

Fire is fast...but you can beat it with quick-acting Kidde CO_2 Extinguisher. Point the horn...pull the trigger ...and flame-smothering CO_2 does the rest. Write for free literature.

Walter Kidde & Company
1236 Main Street, Belleville 9, N. J.

Kidde

BREVITY—Identify by IEN - 12147 If you write the maker

IT'S EASY TO GET THE BRAZING OUTPUT YOU NEED WITH *EASY-FLO and SIL-FOS*

Two girls easily turn out the transformer connectors below, 560 per hour, with the motorized turntable and natural gas burner set-up at right. Brazing is automatic as assemblies, with rings of EASY-FLO wire preplaced, pass over burners located around half the table circumference.

Copper casting, copper cut and EASY-FLO ring.

Brazed connector

You can get similar happy results on your brazing jobs with EASY-FLO or SIL-FOS by following the same simple formula—*preplace the alloy and use a fast heating medium with a set-up designed to keep assemblies moving to and through the heating station in a steady stream.*

BULLETIN 20 gives full details about time-labor-cost-saving production with the low-temperature silver brazing alloys EASY-FLO and SIL-FOS. Write for a copy today.

HANDY & HARMAN 82 Fulton St., New York 38, N. Y.

Agents in Principal Cities. In Canada: HANDY & HARMAN of Canada, Ltd., Toronto

BREVITY—Identify by IEN - 12148 If you write the maker

Whether you work with

or with

This can help you

This latest revised edition of "INCO NICKEL ALLOYS FOR ELECTRONIC USES" is just the thing to provide you with valuable fingertip information on the right alloy for your electronic or electrical design.

- It contains a summary of the various nickel alloys for use in electronic applications.
- It gives a composition breakdown of the alloys and discusses the general characteristics of each.
- It lists typical uses for each alloy and describes the forms produced.

As you know, Nickel is essential in defense; but if you have a redesign problem to give longer service life in electrical or electronic equipment—or a new product in the making, it's a safe bet you will find new and useful information on Nickel and Nickel Alloys in this up-to-date booklet. Send for it now. Use the handy I.E.N. reply card to ask for your free copy.

THE INTERNATIONAL NICKEL COMPANY, INC.
67 Wall Street, New York 5, N. Y.

BREVITY—Identify by IEN - 12149 If you write the maker

it's TOUGH! it's dependable

Securityflex
PORTABLE CORD

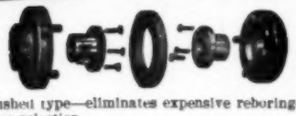
Securityflex* keeps equipment running. Takes abuse, resists kinking, flexes indefinitely. Resists oil, water, abrasion, age, ozone.

Insist on Securityflex Portable Cord for your equipment. So rugged it's used on mine drills. It's the right cord for your job. Made by Anaconda Wire & Cable Company, 25 Broadway, New York 4, New York.

*Reg. U. S. Pat. Off.

BREVITY—Identify by IEN - 12150 If you write the maker

Browning
FLEXIBLE COUPLINGS
WITH SPLIT TAPER COMPRESSION BUSHINGS



(1) Bushed type—eliminates expensive reboring—wide bore selection
(2) Completely machined from solid steel or malleable castings
(3) Compact-maximum strength
(4) Neoprene insert-added strength, resiliency, shock absorbing, oilproof, greaseproof, heat resistant
(5) Easy to mount, easy to remove, positive locking clamp fit, 1/6th to 40 H.P. range—available from stock.

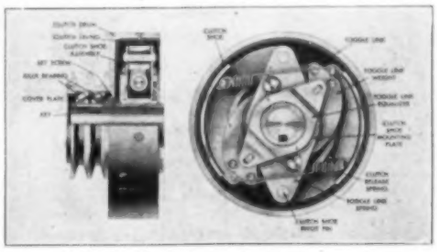
Write for free Literature and the name of the Browning Gripbelt distributor near you

BROWNING MANUFACTURING COMPANY
INCORPORATED
1950 BROWNING DRIVE MAYSVILLE, KENTUCKY

BREVITY—Identify by IEN - 12151 If you write the maker

DRIVE . . Centrifugal clutch permits gasoline engine to start free

Source: SALSBURY CORP.
1159-63 E. Florence Ave., Los Angeles 1, Calif.



Mounts on engine shaft

Tog-o-Loc Series now includes a range of centrifugal-clutch sizes with 7 to 15-hp. ratings to mount on 1⅛, 1 7/16, 1½-in. standard engine shafts. Normal engagement speed can be set anywhere from 11 to 1,200 rpm. Disengagement speed is minimum at 800 rpm.

The clutch is characterized by its centrifugal mechanism which employs a linkage to connect the heel and toe of two opposing shoes that grip or release a friction lining on the inside face of the driven drum. This drum and the V-belt sheave float on dual ball bearings on the rotating mechanism during periods in which the engine is idling below engagement speed. The assembly can be specified complete with the sheave or with a plain hub.

BREVITY—Identify by IEN - 12152 If you write the maker

PRINTING . . Dry process equipment heats to copy black on white originals

Source: MAGNA-CREST CORP.
730 Fifth Ave., Room 605, New York 19, N. Y.

An M-M-M product

Thermo-Fax trade names a new duplicator machine and heat-sensitive paper sheets to make direct dry copies of black on white originals, such as letters, forms, memoranda, invoices, charts, sketches or any other subjects that have been printed or written. The original and a sheet of the sensitized paper are clamped under a cover and subjected to heat from an infra-red light source.

The black markings on the original are reproduced on the heat-sensitive sheet as these markings provide a path for the heat from the infra-red source to the sheet. As soon as an exposure has been made, the original and the complete copy can be removed. The copy then is ready for use.

The sensitized sheet is not light sensitive so it requires no unusual care in storage or any dark-room facilities. The duplicator machine is mounted on wheels for portable application. It will produce a copy in about 15 sec. and has capacity for sheets to 8½ by 14 inches. List price for the sheets is $5.50 per hundred in the 8½ by 14-in. size in 500 lots. The machine in standard design lists at $525.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 12153 If you write the maker

SAFETY EQUIPMENT FOR ALL INDUSTRIES

For Handling Blanks
OF
METAL • GLASS • FIBRE
PLASTIC • LINOLEUM • TILE
AND OTHER NON-POROUS MATERIALS

PREVENTS INJURIES

SAVES TIME

IPCO
SAFETY PARTS LIFTER

Speeds up the job on parts that are difficult to handle with the fingers. Practical for flat or curved surfaces, damp or oily parts. Instantly affixed or released at the option of the operator. Cup diameter 2½", length over all 15".

Send for Bulletin P-121

IPCO *Safety Equipment for all Industries*
INDUSTRIAL PRODUCTS COMPANY
2801 N. FOURTH STREET • PHILADELPHIA 33, PA.

BREVITY—Identify by IEN - 12154 If you write the maker

LUBRICATION ECONOMY

"LUBRIPLATE Prevented Parts Replacements and Tie-ups"

After clearing 500 acres of salt marsh for the Leslie Salt Company, J. O. Archibald, contractor of Redwood City, California said, "*LUBRIPLATE kept equipment rolling in mud, muck and water.*" You may never have an earth-moving job like this to do, but if you turn a wheel in any industry, you can profit by Mr. Archibald's experience.

1. LUBRIPLATE reduces friction and wear
2. LUBRIPLATE prevents rust and corrosion
3. LUBRIPLATE is economical to use

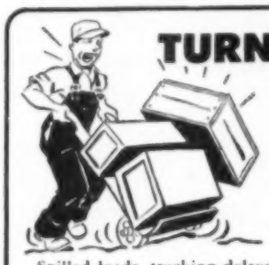
Write today for case histories of savings made through the use of LUBRIPLATE in your industry.

LUBRIPLATE DIVISION
Fiske Brothers Refining Co.
Newark 5, N.J. Toledo 5, Ohio

The Different LUBRICANT!

DEALERS EVERYWHERE, consult your Classified Telephone Book

BREVITY—Identify by IEN - 12155 If you write the maker



TURNOVER
LIKE THIS COSTS YOU MONEY!

Spilled loads, trucking delays, underfoot hazards are costly. There's no substitute for a *real* heavy-duty floor—and that means concrete, *good* concrete.

Rebuild worn-out floors over week-end (no plant tie-up) with 'Incor' 24-Hour Cement—ready to use in 24 hours, saves a week or more. Faster thorough 'Incor'* curing means stronger, longer-lasting floors.

Write for booklet, "Heavy-Duty Floors"—address Lone Star Cement Corporation, 100 Park Avenue, New York 17.

*Reg. U. S. Pat. Off.

LONE STAR CEMENT CORPORATION

Offices: Abilene, Tex. • Albany, N. Y. • Bethlehem, Pa. • Birmingham • Boston Chicago • Dallas • Houston • Indianapolis • Kansas City, Mo. • New Orleans New York • Norfolk • Philadelphia • Richmond • St. Louis • Washington, D. C.

BREVITY—Identify by IEN - 12156 If you write the maker

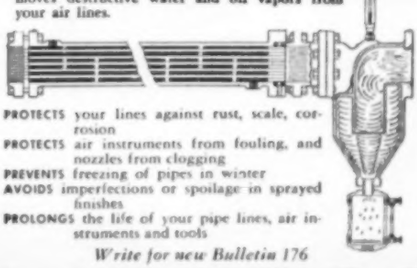
You Can be Sure of Clean Dry Air for your Compressed Air Tools

3500 Gallons

1 YEAR'S water extraction from air lines equipped with Adams Aftercooler and Cyclone Separator

with ADAMS Aftercooler and Cyclone Separator

• Reducing compressed air temperature to within 10° of the cooling water, Adams Equipment condenses and removes destructive water and oil vapors from your air lines.



PROTECTS your lines against rust, scale, corrosion
PROTECTS air instruments from fouling, and nozzles from clogging
PREVENTS freezing of pipes in winter
AVOIDS imperfections or spoilage in sprayed finishes
PROLONGS the life of your pipe lines, air instruments and tools

Write for new Bulletin 176

R. P. ADAMS CO., INC. 219 E. PARK DRIVE BUFFALO 17, N. Y.

BREVITY—Identify by IEN - 12157 If you write the maker

Every designer must be something of a metallurgist

Here are 72 pages packed with information of vital significance to engineers faced with the design, selection and treatment of steel components to give a specified service at minimum cost.

Besides dealing with scientific design, the book gives important metallurgical data, all compiled from the designer's viewpoint. Free on request.

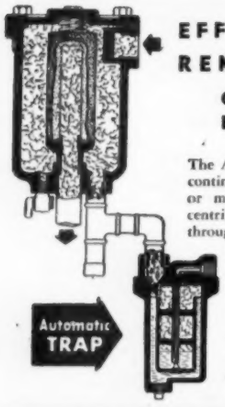
This booklet sent to you FREE

Climax Molybdenum Company
500 Fifth Avenue · New York City

F22

BREVITY—Identify by IEN - 12158 If you write the maker

Poro-Stone Filtration FOR COMPRESSED AIR



EFFICIENTLY REMOVES
OIL, WATER
PIPE SCALE

The Adams *Poro-Stone* Filter gives continuous service without attention or maintenance expense. Efficient centrifugal separation *plus* diffusion through Poro-Stone, removes contamination completely without pressure loss. Automatic Trap eliminates attention and assures continuous and efficient filter operation. Write for complete data—Bulletin 176.

R. P. ADAMS CO., INC.
219 E. Park Dr., Buffalo 17, N. Y.

ADAMS *Poro-Stone* AIR FILTER

BREVITY—Identify by IEN - 12159 If you write the maker

Link-Belt CAR SPOTTER releases manpower for other jobs

Get faster car spotting

Reduce switching and demurrage time to a minimum. One man with two or three turns of rope around the motor-driven capstan will handle up to six loaded railroad cars. Available with 5 or 10 hp, integral or separate motors, stationary or portable.

Link-Belt offers a complete line of car spotters . . . also specializes in drum type puller applications.

WRITE TODAY
For 16 Page Bulletin 1992-A

LINK-BELT COMPANY:
Chicago 8, Indianapolis 6, Philadelphia 40, Atlanta, Houston 1, Minneapolis 5, San Francisco 24, Los Angeles 33, Seattle 4, Toronto 8, Springs (South Africa). Offices, Factory Branch Stores and Distributors in Principal cities.

INDUSTRIAL EQUIPMENT NEWS

CCA · The Original IEN Founded 1933 · NBP

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What's New · EQUIPMENT · PARTS · MATERIALS

Vol. 19 DECEMBER, 1951 No. 12

INQUIRIES

A situation has been developing in recent years that has serious import for you and for us in our mutual interests in industrial product information. It concerns your inquiries to the manufacturers. We talked about it, partly forecast it in this page-four year-end piece two years ago. A form letter sent out just last month by a manufacturer to all publications brings it to a head.

"If you are planning to review our new catalog we ask that you do **not** do so. We are circulating it through our own mailing list. It is a relatively expensive book, the distribution of which we would like to control.

"We are trying to avoid casual requests from persons whose interests in the catalog or our products is purely cursory. It would be difficult for us to screen the considerable number of requests that might come from a review of the catalog in your magazine."

No need for us to point out what that letter could do to product-information publishing were its use to be spread among many manufacturers and extended from literature to products. The situation needs correcting now. It can be summed up in three words—"broadcasting incomplete information."

IEN starts with a written release and definite permission to publish a new product description or a literature item. Each release is checked for impartial understandability, for inclusion of essential facts, for newness and for actual availability. We ask for anything that may be missing. Then we write our descriptions.

This practice enables us to know that you are exercising your experienced judgment when you send your inquiry direct or to us to forward to the manufacturer. We are confident that you have fair knowledge of the product and will not be inquiring on some omitted fact only to find the product is not suited.

We know also, through the continuing operation of our reader verification and our own screening of reader-service inquiries, that your position in your organization qualifies you to act with authority. IEN's service is both selective and complete.

Your IEN inquiry will tell the manufacturer that you have basic knowledge of the product, are seriously interested either in current purchase or in careful consideration for future development. IEN identified inquiries are far indeed from purely cursory. They may be in fair numbers, depending on the product. They will never total up to a "flood". They have been "deflooded" by exposure to the facts.

Such inquiries merit appropriate action by the manufacturer because they come from a verified reader of Industrial Equipment News in which every effort is made to provide essentially complete information for carefully selected men in authoritative positions.

You can help us maintain this position. You can be a very important factor in stopping the practice of incomplete information broadcasting if you will be skeptical of incomplete data wherever you see it, if you will watch for our verification request and return it to us, if you will report any case so we can check it in which you do not receive satisfactory action from the manufacturer, if you will tell us of cases of particularly good action so we can suggest the same procedure to others, if you will identify your inquiries to show those requesting data for your files and those for which you desire individual attention by the maker.

W. E. Irish.

BREVITY—Identify by IEN - 12160 If you write the maker

LOW COST, ORGANIZED STORAGE SPACE
32-DRAWER (96 COMPARTMENTS)
Metal Storage Units

CRYSTAL CLEAR OR MATCHING GRAY PLASTIC DRAWERS

MODEL J-32
$119.95 F.O.B. AKRON
15¾" high, 6" deep, 12½" wide

HUNDREDS OF USES:
Useful in every shop, lab, office, stockroom, store, home, assembly line . . . in radio, TV, photographic and ignition work.

Orderly storage for small parts, bolts, nuts, drills, tools, carbide tips, buttons, thread, paper clips, labels, pins, rubber bands, stamps, films, photo supplies, negatives, fishing tackle, artist supplies, medical supplies, marine supplies, drugs, jewelry, etc. Safety catch ends accidental spilling, identify card drops into slot in drawer front.

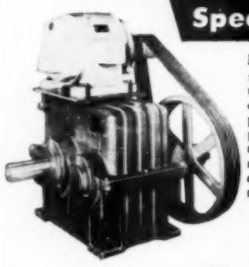
Made in 6 sizes:			
J-64	64 drawer	(192 compartments)	$21.37
J-32	32 drawer	(96 compartments)	11.95
J-24	24 drawer	(72 compartments)	10.25
J-16	16 drawer	(48 compartments)	7.29
J-12	12 drawer	(36 compartments)	5.43
J-8	8 drawer	(24 compartments)	4.08

SEND FOR FREE DESCRIPTIVE FOLDER

AKRO MILS, INC. P.O. BOX 989 AKRON 9, OHIO

BREVITY—Identify by IEN - 12161 If you write the maker

Step Down Motor Speeds To Job Needs WITH . . . S-A SACO Speed Reducers



It's no trick to convert your standard high speed motors to slower operation. Compact, efficient Saco Speed Reducers provide a wide range of output speeds—reductions up to 60 to 1. Almost any full speed motor can be mounted on top or end. Save floor space and maintenance costs.

Write for Saco Catalog 643

Five sizes to choose from. Silent, steel helical gears—totally enclosed—operate in oil.

STEPHEN S-A ADAMSON Mfg. Co.

Tellevel · Bin Level Controls · SealMaster Ball Bearings · Saco Speed Reducers · Car Loaders · Car Pullers · Winches

231 RIDGEWAY AVE., AURORA, ILL.

BREVITY—Identify by IEN - 12162 If you write the maker

Electrical breakaway coupling disconnects *automatically*

Unattended, this new coupling disconnects when a predetermined pull is applied (10 to 40 lbs. spring tension). Couples or uncouples, without a wrench. Moisture proofed and pressurized to 750 lbs. psi.

Wherever lines carrying steam, water, air, oil or electricity require instant separation, WIGGINS quick disconnect couplings are giving superior performance.

INST-O-MATIC COUPLINGS

We engineer to meet your requirements. Submit your problem.

Exclusive Distributor
AIR ASSOCIATES INCORPORATED
TETERBORO—216-222 Union St., Hackensack, N.J.
CHICAGO—3315 West 63rd Street
DALLAS—3214 Love Field Drive
GLENDALE—1231 Air Way
MIAMI—P.O. Box 141, Int'l Airport

Manufactured by
Wiggins
E. B. WIGGINS OIL TOOL CO., Inc
3424 E. Olympic Blvd., Los Angeles 23, Calif.

BREVITY—Identify by IEN - 12163 If you write the maker

...NEW LOW-COST

LOVEJOY TILTING MOTOR BASE

only $6.00

There's nothing equal to this well-built tilting motor base at the remarkable price of only $6.00. It maintains constantly correct belt tension. Used with a variable speed pulley, the speed you want may be quickly had simply by turning the handle screw adjustment (even while the motor is running).

Adjustable in both width and length, the Lovejoy Tilting Motor Base may be used with all sizes and types of fractional motors up to ¾ horse power. Order yours today—now!

Send for all facts on the complete Lovejoy line.

LOVEJOY FLEXIBLE COUPLING CO.

5014 W. Lake St. Chicago 44, Illinois

Also Mfrs. Lovejoy Flexible Couplings, Variable Speed Transmissions and Universal Joints.

BREVITY—Identify by IEN - 12164 If you write the maker

- Flange Units
- Pillow Blocks
- Take-Up Units
- Cartridge Units
- Hanger Units

SEALMASTER BALL BEARING UNITS

Investigate these Important Features

FOR TOP PERFORMANCE!

- ✓ **Permanently Sealed.** Patented centrifugal, felt-lined flinger sealing principle seals *in* lubricant, seals *out* dirt and dust, cuts maintenance costs.
- ✓ **Self-Aligning.** SealMasters are fully self-aligning . . . misalignment of the shaft cannot interfere with the effectiveness of the seal.
- ✓ **Pre-Lubricated** at the factory, the SealMaster reaches you ready for immediate service.

These points, plus many other engineering features, mean that SealMasters are built to last longer, and give more satisfactory service. Specify SealMasters for replacements, and for new products.

Request a Copy of Catalog 845 for complete details

BEARING DIVISION

STEPHENS-ADAMSON MFG. CO.

Tellevel—Bin Level Controls · Car Loaders · Car Pullers · Winches · SealMaster Ball Bearings · ChangeMaster Variable Speed Reducers · Saco Speed Reducers

481 RIDGEWAY AVE., AURORA, ILL.

BREVITY—Identify by IEN - 12165 If you write the maker

EXTENDS TO ANY DESIRED HEIGHT IN A FEW MINUTES

Always Ready for Work
- No Erection Required
- No Loose Parts

HI-LIFT EXTENSION SCAFFOLD

HI-LIFT Extension Scaffolds can be extended from a six-foot ladder to a 30-foot scaffold in less than 5 minutes . . . hand or electrically operated. Comes to you ready for work—no erection required, no loose parts. Built to meet individual requirements. Ideal for Painting, Lighting, Cleaning, and all overhead maintenance. Pays for itself in time and labor saving.

Also makers of
HI-LIFT MARQUEE SERVICER
ATLAS ONE-MAN TRUCK LOADER

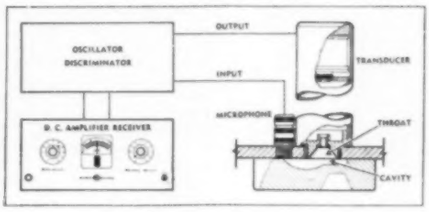
Write for Full Information

ATLAS INDUSTRIAL CORP.
847 39th Street, Brooklyn 32, N. Y.

BREVITY—Identify by IEN - 12166 If you write the maker

TESTING . . Electronic comparator checks cylinder head cavities against a master

Source: POOLE MFG. ENGINEERS
P. O. Box 1532-A, Dallas 2, Texas



About two seconds per cavity

Cylinder heads in which the head cavities are to be checked for volume against a master cavity are slid into position one at a time beneath a steel plate on the table of the company's new Electrosonic Cavitometer. The head enters in inverted position and the plate is clamped on it by hydraulic cylinders. They are actuated by air pressure to close the cavities and to position a sonic throat above the center of each cavity. Back of each throat is a transducer and imbedded in the plate adjacent to the throat is a microphone.

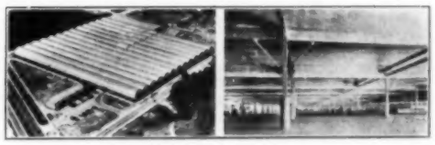
The transducers and the microphones connect to an oscillator and to a dc. amplifier receiver for operation in connection with a stepping switch. This switch places one cavity and the master in opposed sonic frequencies against each other. Difference in frequency due to any difference in cavity volume is then employed to actuate a meter and indicating lights.

The stepping switch moves on to the next cavity to compare it with the master if the cavity under test is within tolerance limits. If the tolerance is exceeded or if the cavity is improperly sealed, operation stops until the inspector can make his decision and start it again. The machine is available for a specified number of cavities in a cylinder head.

BREVITY—Identify by IEN - 12167 If you write the maker

BUILDING . . Quonset design is prefabricated for field erection

Source: GREAT LAKES STEEL CORP.
50 Tecumseh Road, Detroit 29, Mich.



For manufacturing and warehousing

Long-Span is new design in the company's line of Quonset prefabricated buildings framed with the company's Stran-Steel members are made of cold-formed strip steel. Illustrated to the left is a multiple-unit assembly for a large structure. Interior appearance is illustrated to the right.

Interior columns are 40 ft. apart along the building's depth, 35½ ft. apart across its width. Clearance under trusses and struts can be either 15 or 18 feet. The roof arch provides unobstructed dome height between the girders and struts of either 25 or 28 feet. Straight side walls with standard or special doors complete the assembly.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 12168 If you write the maker

TROMBETTA SOLENOID CO.
331 N. MILWAUKEE ST. • MILWAUKEE 2, WIS.

SB-373 SHOE BRAKE
10" WHEEL, 5" FACE, 450 FT.-LBS.

SB-300 LINE OF BRAKES
TORQUE 3 TO 16500 FT.-LBS.

B-100 LINE OF DISK BRAKES
TORQUE 10 TO 25000 FT.-LBS.

EIGHT LINES OF SOLENOIDS
RECIPROMOTORS AND SEMOTORS

BREVITY—Identify by IEN - 12169 If you write the maker

Do You USE or NEED

INFRARED HEAT?

THESE USEFUL **DATA SHEETS** Show you how to SAVE TIME & MONEY with CHROMALOX *Electric* RADIANT HEATERS

TELL US your application problems and we'll send you valuable information which may lead to improved production at decreased costs on the jobs for which you use or need infrared heat in your plant.

EDWIN L. WIEGAND CO., Industrial Div.
7506 Thomas Boulevard, Pittsburgh 8, Pa.

I need infrared heat for _____

Send me application file as above.

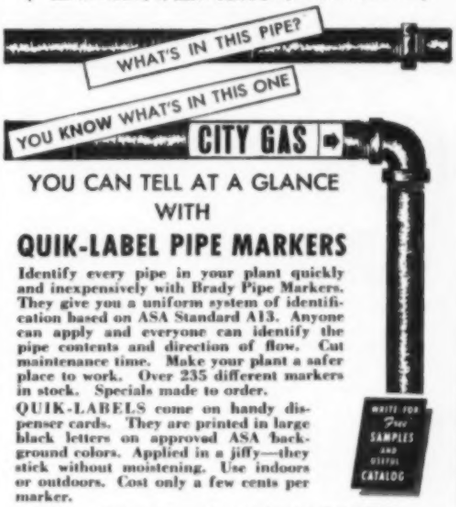
Name _____
Company _____
Street _____
City _____ Zone _____
State _____ 10-21

See Chromalox Unit Heaters Advertisement, Page 11

CHROMALOX

ELECTRIC HEAT FOR MODERN INDUSTRY

BREVITY—Identify by IEN - 12170 If you write the maker



YOU CAN TELL AT A GLANCE WITH

QUIK-LABEL PIPE MARKERS

Identify every pipe in your plant quickly and inexpensively with Brady Pipe Markers. They give you a uniform system of identification based on ASA Standard A13. Anyone can apply and everyone can identify the pipe contents and direction of flow. Cut maintenance time. Make your plant a safer place to work. Over 235 different markers in stock. Specials made to order.

QUIK-LABELS come on handy dispenser cards. They are printed in large black letters on approved ASA background colors. Applied in a jiffy—they stick without moistening. Use indoors or outdoors. Cost only a few cents per marker.

WRITE FOR Free SAMPLES AND USEFUL CATALOG

DISTRIBUTORS IN OVER 125 PRINCIPAL CITIES

MANUFACTURERS OF SELF-STICKING PRODUCTS

WIRE MARKERS · PIPE MARKERS · SAFETY SIGNS · PRINTED "SCOTCH" TAPE · MARKERS & STENCILS

W. H. BRADY COMPANY

1621 E. SPRING STREET • CHIPPEWA FALLS, WIS.

BREVITY—Identify by IEN - 12171 If you write the maker

HERE'S ECONOMICAL Wound Rotor Motor Control

THIS COMBINATION of primary and secondary control for your wound-rotor motors will give you dependable, economical control . . . smooth acceleration and positive speed regulation.

PRIMARY CONTROL, Type 371 Wall Mounted Starters are designed for space saving, low original cost installation. Operating costs are kept down by rolling-wiping contact action, low inertia moving parts, and a completely oil-immersed mechanism that is sealed from the atmosphere.

SECONDARY CONTROL, Allis-Chalmers Type 9410 starting duty drum switches have four balanced control points . . . speed regulating switches have five. Both have radial and thrust ball bearings on each end of the shaft for easier, smoother operation.

Bulletin 14B7274 describes Type 371 starters for 2300-volt motors of 350 hp or less. Call your A-C representative or write Allis-Chalmers, Milwaukee 1, Wis. for this bulletin and more information on Type 9410 drum switches.

ALLIS-CHALMERS A-3531

BREVITY—Identify by IEN - 12172 If you write the maker

KEEP THINGS MOVING with a

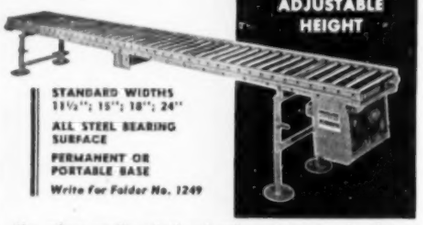
METZGAR "LIVE ROLLER" POWER UNIT

4 STANDARD SIZES

ADJUSTABLE HEIGHT

Handles the jobs that are too "tough" for powered belt units. Undamaged by sharp corners or rough edged work. Supplies dependable power in gravity lines.

Work can be slowed or held without stopping conveyor.



STANDARD WIDTHS 11½"; 15"; 18"; 24"

ALL STEEL BEARING SURFACE

PERMANENT OR PORTABLE BASE

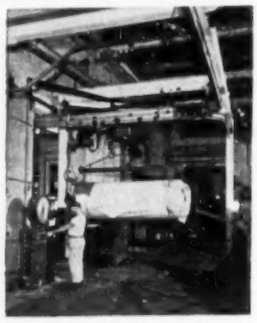
Write for Folder No. 1249

Also mfgrs gravity wheel and roller conveyors and switches, end-wand wheels and cable-reel dollies.

METZGAR CO.
417 Douglas N. W.
GRAND RAPIDS 4, MICH.

BREVITY—Identify by IEN - 12173 If you write the maker

IT TOOK "BACKACHE" AND "HEADACHE" OUT OF HANDLING



This American MonoRail Overhead Handling System entirely eliminated all problems previously encountered. The system, consisting of 1650 feet of track, 8 carriers with electric hoists and MonoTractor drive, a power-operated crane, three track scales and the normal complement of track switches, produced the following improvements:

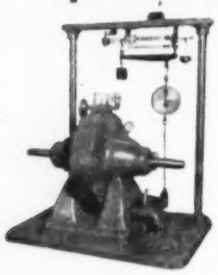
1. Operator fatigue was greatly reduced.
2. Traffic flowed freely—no aisle congestion.
3. No side-tracking during travel — time saved.
4. Loads automatically weighed — no transfer to scales.
5. Damage to floors completely eliminated.
6. Damage to load greatly reduced.

Let an American MonoRail engineer show you how it can be done in your plant, at no obligation, of course. Send for C-1 Bulletin.

THE AMERICAN MONORAIL COMPANY
13111 Athens Avenue • Cleveland 7, Ohio

BREVITY—Identify by IEN - 12174 If you write the maker

Hydraulic Dynamometers for EXACT PERFORMANCE DATA on prime movers!



HI-EFF

Write for Bulletin No. 760

You can *depend* on the performance data taken from a Taylor "HI-EFF" Hydraulic Dynamometer. Efficient, compact Taylor "HI-EFF" offers the most economical investment and maintenance cost per hour. 72 different capacity models each with wide range of h.p. and speed. Capacities from fractional to 10,000 h.p. Speeds from 0 to 25,000 r.p.m. Reversible if desired. Taylor engineers will be glad to make recommendations.

Dynamometers • Static Balancers • Precision Drilling Machines

TAYLOR DYNAMOMETER & MACHINE CO.
528 N. WEST HIGHLAND AVE. MILWAUKEE 3, WIS.

BREVITY—Identify by IEN - 12175 If you write the maker

HEATING . . Portable space unit burns liquid petroleum gas, 11,000 btu.

Source: MUTUAL LIQUID GAS EQUIPMENT CO.
3606 W. Imperial Highway, Inglewood, Calif.

Clean heat quickly

Intense heat is developed at the burner on the base element of this new portable heater to raise temperature in the upper ventilated-hood portion for safe heating purposes. The unit provides quick clean odorless and smokeless heat to serve a small enclosed area. When the container at the bottom becomes empty it can be exchanged for a filled one or can be refilled upon return to an authorized liquid-petroleum gas station.

The unit itself is interchangeable with the company's No. 2 and No. 3 furnaces or can be attached to its No. 6, No. 11 or No. 21 cylinders. It also can be used with the ordinary propane-gas cylinder with a POL fitting on the connection hose.

BREVITY—Identify by IEN - 12176 If you write the maker

FLOORS . . Resin type liquid for non-slip finish on wood, linoleum

Source: MASURY-YOUNG CO.
74-78 Roland St., Boston 29, Mass.

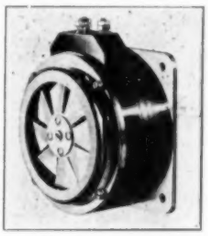
No wax is used

Floorsafe is a new non-inflammable water-emulsion resin-type liquid for mop application on an asphalt tile, rubber tile, linoleum, wood floors. The liquid dries in about 30 minutes to provide a high-lustre slip-resistant surface. When the surface becomes dull it can be buffed to restore the lustre.

BREVITY—Identify by IEN - 12177 If you write the maker

MOTOR . . Synchronous design for application in original equipment

Source: ALLIS-CHALMERS MFG. CO.
909 S. 70th St., Milwaukee 14, Wis.



No starter needed

New motor, operating on the reluctance principle, is now available to original equipment designers on an experimental basis. It has not been previously available except by special arrangement. The motor is able to start and pull into step at any frequency from 10 to 400 cycles without requiring starting equipment.

A typical unit is 4 in. in diameter by 2¾ in. in length and weighs 2.6 pounds. This size develops 8 in. oz. of starting torque and 0.8 in. oz. of synchronous torque. It can be built to operate continuously at 250 volts or less, either single or polyphase, within the frequencies named.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 12178 If you write the maker

NEW THREAD COMPOUND

Licks Stud Freezing Even at 1800° F.!

SAFE for all high temperature applications!
SAFE for Stainless and Alloy Steels, too, will not pit or corrode!
IDEAL as a cutting compound to prevent galling of Stainless Steel!

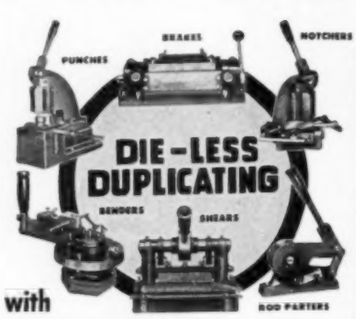
FREE TEST SAMPLE! Send for YOURS *TODAY*

Make a convincing test of Fel-Pro C-5 "Hi-Temp" Thread Compound at our expense. Then you can be sure that C-5 will do everything we say it will do. See how it cuts heater dismantling time—how it cuts costly stud breakage and eliminates pitting. Then you will standardize on C-5 just as have some of the nation's largest refineries, utilities and process industries. Write for FREE Sample and data sheet TODAY!

FEL-PRO C-5 "HI-TEMP" THREAD COMPOUND

FELT PRODUCTS MFG. CO.
1523 CARROLL AVENUE • CHICAGO 7, ILLINOIS

BREVITY—Identify by IEN - 12179 If you write the maker



with di-acro PRECISION MACHINES

Eliminate dies . . . speed production . . . in both your experimental and quantity run duplicating operations. An unusually wide variety of both simple and intricate parts can be precision made by "DIE-LESS DUPLICATING" with the individual or co-operative application of DI-ACRO Precision Machines (see examples at right). DI-ACRO Machines are now offered in a total of six types and 21 different sizes, including two new units—a power driven Shear and a hydraulic Bender.

SEND FOR 40 PAGE CATALOG

ENGINEERS—DESIGNERS—PRODUCTION MEN should all have this informative catalog which contains technical data covering DI-ACRO Machines and our offer of "Die-Less Duplicating" Engineering Service to aid in solving design and production problems... WRITE FOR YOUR COPY TODAY.

O'NEIL-IRWIN MFG. CO.
318 8th Avenue, LAKE CITY, MINN.

BREVITY—Identify by IEN - 12180 If you write the maker

Oxweld

PORTABLE FLAME-CUTTING MACHINES FILL A VARIETY OF SHOP REQUIREMENTS

This Oxweld CM-16 is designed for oxy-acetylene flame-cutting of steel plate up to 4 inches thick. It travels directly on the work and cuts circles automatically—hand-guided, it cuts irregular shapes. Operated on track this machine cuts straight lines. Adaptors are available for straight-line cutting on thick steel or for beveling. The CM-16 weighs only 45 pounds and is low in price. Write for catalog, Form 4487.

LINDE-AIR PRODUCTS COMPANY
A DIVISION OF UNION CARBIDE AND CARBON CORPORATION
30 East 42nd Street UCC New York 17, N. Y.
In Canada: Dominion Oxygen Company, Limited, Toronto

BREVITY—Identify by IEN - 12181 If you write the maker

for • SPRAYING • WASHING • RINSING • COOLING • AIR CONDITIONING

Get the most out of your Spraying Equipment with minimum power . . . with efficient spraying.

Use Yarway Nozzles. No internal vanes or other restrictions to clog or hinder flow.

Wide range of standard sizes and capacities. Cast or machined from solid bar stock.

Thousands in use. Write for Bulletin N-616.

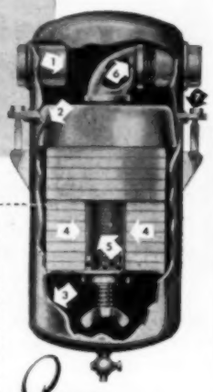
YARWAY

SPRAY NOZZLES

YARNALL-WARING COMPANY
122 Mermaid Avenue, Philadelphia 18, Pa.

BREVITY—Identify by IEN - 12182 If you write the maker

Removes Last Traces of Oil and Moisture from COMPRESSED AIR LINES



THICK FELT DISCS PROVIDE SUPER FILTRATION

Double Action Principle Removes Moisture and Dirt Two Ways—Air is cleaned by both mechanical separation and filtration/absorption. Air enters at (1) strikes Deflector Cup (2) by which heavier droplets and dirt particles are directed to sides (3) and thence downward at high velocity to base. Mechanically cleaned air then passes at low velocity thru Discs (4) which filter the air and absorb last traces of oil and moisture. Clean, dry air passes out thru Bronze Screen (5) and Outlet (6).

Staynew ABSORPTION FILTER

DOLLINGER PROTECTOMATIC STAYNEW FILTERS

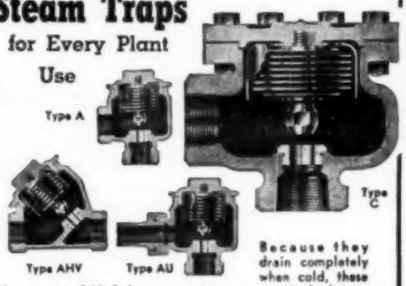
Request Bulletin 8-1A. Address Dept. 1

DOLLINGER CORPORATION
11 CENTRE PK., ROCHESTER 3, N. Y.

BREVITY—Identify by IEN - 12183 If you write the maker

NICHOLSON MAKES

FREEZE-PROOF Steam Traps for Every Plant Use



Because they drain completely when cold, these four types of Nicholson steam traps are positively freeze-proof. Can be freely installed outdoors. Universally recommended for use in lines which need not be in continuous use during cold weather, because they are freeze-proof and because their 2 to 6 times average drainage capacity results in minimum heat-up time. The non-air binding feature of Nicholson traps also notably facilitates heat transfer in severe weather. Size ¼" to 2"; press. to 225 lbs.

BULLETIN 450
159 Oregon St., Wilkes-Barre, Pa.

W. H. NICHOLSON & CO.
TRAPS · VALVES · FLOATS

BREVITY—Identify by IEN - 12184 If you write the maker

THE NEW SAFETY "UTILITY" MARKING OUTFIT

Holder Holds Nine Sizes of Type From 1/32" to ¼"

Designed for light stamping work, the "Utility" outfit is ideal for marking etched plates, tags, keys, stock checks; brand names or stock numbers on steel bars; special coding, serial numbering, identification, inspection and other marking where two or more characters are required.

Send for Literature and Prices

M. E. CUNNINGHAM CO.
SAFETY STEEL STAMPS

99 E. CARSON STREET PITTSBURGH, PA.

BREVITY—Identify by IEN - 12185 If you write the maker

MARKING . . Self adhesive label on cards to identify aircraft piping

Source: W. H. BRADY CO.
1604 E. Spring St., Dept. 236, Chippewa Falls 9, Wis.

Ask for sample

Color coding combined with geometrical symbols and lettering are employed in a new stock assembly of self-adhesive labels to mark fluid lines in aircraft. The labels conform to Air Force-Navy Aeronautical standards AND-10375. The card-mounted labels are available in individual label lengths from ¾ to 9 in. on cards that are standard at 9 in. in length. The labels peel from the card for application on any clean dry surface without moistening. Stock designs with data on sizes and prices are shown on two-page Bulletin 153.

BREVITY—Identify by IEN - 12186 If you write the maker

CALCULATING . . Tabulated charts for payrolls involving tax deductions

Source: DELBRIDGE CALCULATING SYSTEMS INC.
2504-8 Sutton Ave., St. Louis 17, Mo.

To figure taxes effective Nov. 1

Revised figures have been calculated and are assembled on a new edition of the company's payroll-calculating charts to show the new withholding deductions effective November 1st to meet the Revenue Act of 1951. Withholding tax and Social Security deductions are shown on the same line for each wage bracket so both can be recorded at once.

Four assemblies in the line provide for weekly, bi-weekly, semi-monthly and monthly payrolls. All include tables covering daily and miscellaneous period reductions. List price is $3.50 for any one of the four regular units. A special assembly for miscellaneous payroll-period deductions covering 1 to 31 days in one-day steps lists at $5. Each assembly measures 7½ by 9¾ in. in overall dimensions.

BREVITY—Identify by IEN - 12187 If you write the maker

DRAFTING . . Flat-lead pencil draws uniform thin line, no sharpening

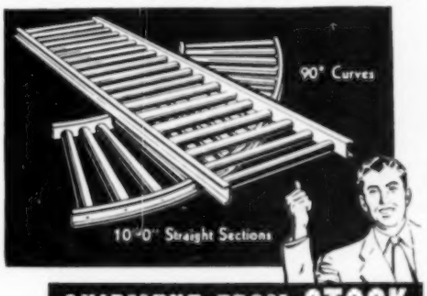
Source: A. W. FABER-CASTELL PENCIL CO.
39-43 Dickerson St., Newark 4, N. J.

Sleeve protects the lead

Imported lead measuring 0.018 in. in thickness by 0.098 in. in width and 4 in. in length is secured in a chuck-equipped holder in a new drafting pencil known as Castell Locktite. The lead is designated No. 9400. The holder alone is No. 9000. Range of hardness between HB and 9H includes 11 different leads, each subject to specification.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 12188 If you write the maker



SHIPMENT FROM STOCK

What are your needs in stock roller conveyor? Offered in several sizes for average duty conveying. Roller spacing 4" or 6" centers. Roller lengths of 12", 16" and 20". Capacity 75 lbs. per ft. with supports on 10'-0" centers and 380 lbs. per foot with supports on 5'-0" centers. Both stationary and portable supports available. Write for literature.

75th ANNIVERSARY

Check your needs today

Logan Conveyors
LOGAN CO., 200 CABEL ST., LOUISVILLE, KY.

BREVITY—Identify by IEN - 12189 If you write the maker

DEPENDABLE TEMPERATURE CONTROL TO 1000° F

Thermohm electric resistance thermometer used with Electromax Controller

This Electromax Controller provides modern *electronic* regulation for temperatures of ovens, furnaces, kettles, tanks, etc. Type of regulation can be either on-off or proportional, yet the instrument is the acme of dependable simplicity. Being a resistance bridge, it needs no standard cell; has only one moving part; is not affected by tremors or vibration; usually needs no attention for months at a time. For details, write us at our nearest office or at 4905 Stenton Avenue, Philadelphia 44, Pa.

LEEDS & NORTHRUP COMPANY, 4905 STENTON AVE., PHILA. 44, PA.
LEEDS & NORTHRUP
MEASURING INSTRUMENTS · TELEMETERS · AUTOMATIC CONTROLS · HEAT-TREATING FURNACES
Jrl Ad ND47 (1C)

BREVITY—Identify by IEN - 12190 If you have a problem of

if you have a problem of misalignment

This new book will be a big help. It contains complete details on the entire Baldwin-Rex line of flexible couplings—Tru-Flex, Semi-Flex, Twin-Flex, Compound and Floating Shaft types. It gives you the facts on why Baldwin-Rex Couplings are truly flexible, are shock absorbing without backlash and are easy to install. The book includes all specifications, prices and horsepower tables.

Just use the coupon to send for your free copy today.

Baldwin-Duckworth Division of Chain Belt Company
3[illegible] Plainfield Street
Springfield 2, Mass. 51-408
Please send me Flexible Coupling Bulletin.
Name.....
Company.....Dept.....
Address.....
City.....State.....

BALDWIN-REX

BREVITY—Identify by IEN - 12191 If you write the maker

SAFE · STRONG · SECURE

Before specifying or purchasing open steel flooring check these exclusive features of Blaw-Knox Grating...

1. SAFETY underfoot at all times assured by twisted steel cross bars.
2. STRENGTH that only rigid "one-piece" Electroforged construction can provide.
3. SECURITY—no wobble, tilt or rattle caused by loose or lost screws, nuts, bolts.
4. EASY to maintain and paint . . . no sharp corners to clog with dirt.
5. MAXIMUM open area for light and air.

For complete data on Blaw-Knox Electroforged Steel Grating and Stair Treads write for Bulletin 2365.

BLAW-KNOX DIVISION OF BLAW-KNOX COMPANY
2050 Farmers Bank Bldg., Pittsburgh 22, Pa.

BLAW-KNOX Electroforged®
STEEL GRATING & STAIR TREADS

BREVITY—Identify by IEN - 12192 If you write the maker

BREVITY—Identify by IEN - 12193 If you write the maker

U. S. Patent No. 2,477,855

- For joining grader, trencher, ditcher and other earth moving conveyor belts.
- For belts 3/8" to 1/2" thick.
- A FLEXCO fastener that is HINGED. Has removable hinge pin.
- Troughs naturally, operates through take-up pulleys.
- Strong, durable . . . pull or tension is distributed uniformly across joint.

Order From Your Supply House. Ask for Bulletin HF 500.

FLEXIBLE STEEL LACING CO
4610 Lexington Street • Chicago 44, Illinois

BREVITY—Identify by IEN - 12194 If you write the maker

HAVE YOU TRIED THIS ONE FOR SIZE?

Small or Large — RP Paint Arrestors Economically Solve the Most Difficult Paint Overspray Problems

Here's another example of the flexibility of R P Paint Arrestors —a bench type booth for spraying small articles. This plant has six such units emptying into a common exhaust duct . . . a simple, effective installation at minimum cost.

WRITE FOR FREE BOOKLET

Helpful, informative suggestions to solve your paint spray booth problems. Write today.

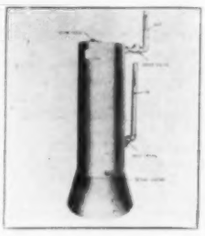
RESEARCH PRODUCTS CORPORATION
Dept. IN; Madison 10, Wis.

RP . . . PRODUCTS OF RESEARCH

BREVITY—Identify by IEN - 12195 If you write the maker

DRYING . . Air dehydrator rates 200 cfm., dry air at 100 pounds

Source: VAN PRODUCTS CO.
3734-21 W. 12th St., Erie, Pa.



For clean dry air

Compressed air with entrained moisture, oil, foreign matter, enters near the bottom of this new Model 200 Vi-Speed drier through a valve-equipped tangential connection. It picks up Dryolite solution that drips down from above and atomizes this solution into a fine mist to mix with the air and pick up moisture. Large particles of moisture, oil and foreign matter separate out, due to centrifugal action, to fall to the bottom of the compartment where they can be blown out at intervals.

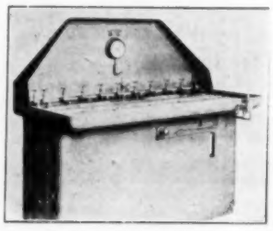
The air turns upward and passes through a center section where Dryolite-wetted baffles attract and remove additional moisture. The air and any remaining moisture finally enter a filter bed made up of granules of the soluble Dryolite. Here the final moisture is removed. The dry air issues from a valve-equipped connection in the top of the housing. Removal of the final moisture causes a certain amount of the drying material to turn into a water solution which drips downward to become mist finally at the bottom.

The Dryolite is available in 20 and 100-lb. containers so the supply in the top chamber can be replenished from time to time. Overall dimensions of the pressure tank alone are 12¾ by 36 inches. The floor stand adds 15 in. to the height and is 18 in. in diameter at its base. Inlet and outlet connections measure 1 inch. The drain connection measures ½ inch. A smaller unit for wall mounting measures 4½ by 16 inches. It is known as Model 25 and rates 25 cfm. at 100 pounds.

BREVITY—Identify by IEN - 12196 If you write the maker

TESTING . . Hydraulic stand to pressure test hydraulic mechanisms

Source: SUPERDRAULIC CORP.
14254-58 Wyoming Ave., Detroit 4, Mich.



To look for trouble

New line of test stands, each supplied to meet specified requirements, is now available from the company to pressure test hydraulic parts, components, mechanisms. Pressure capacity is to 5,000 lb. using a large-volume pump and to 30,000 lb. with the aid of intensifier equipment.

The stand can be equipped with the required pumps and motor drive, relief valves, oil reservoirs, flexible couplings, piping and valves, controls and pressure gages. The assembly shown in the illustration to test hydraulic hoses mounts a manifold at the back of the test table with valve-equipped outlets where the hoses can be attached and detached quickly. Fluid from the hoses flows back through the table top to the reservoir.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 12197 If you write the maker

Here's an AMAZING BRAND NEW SAFETY SIGN that will be welcomed by Safety Men! Brady Safety Signs stick to wood, glass, metal, concrete, etc. without moistening. May be applied to any clean surface in a jiffy. No screws, nails, bolts or skilled help necessary. All you do is peel from card, apply where wanted and the sign is up to stay.

Brady Safety Signs are made of durable cotton cloth, Silicone Coated to resist dirt, grime and moisture. CONFORM TO ASA Standard Z35.1-41. Select your requirements from a complete catalog of standard safety messages. Cost only a few cents per sign. Immediate delivery. Specials made to order.

WRITE FOR Free SAMPLES AND USEFUL CATALOG

MANUFACTURERS OF SELF-STICKING PRODUCTS
WIRE MARKERS · PIPE MARKERS · SAFETY SIGNS · PRINTED "VINYLOR" TAPE · MARKERS & STENCILS

W. H. BRADY COMPANY
3633 E. SPRING STREET • CHIPPEWA FALLS, WIS.

BREVITY—Identify by IEN - 12198 If you write the maker

Precision plastics in small lots are now available at the lowest possible die mold cost. This new method is primarily for pilot runs in the production of 100 to 5000 small precision plastic moldings for experimental and other purposes where conventional type die molds would be prohibitive.

Present capacity: 2-ounce size, 2 x 4 x 6"

Your inquiries are invited.

DAYTON ROGERS
Manufacturing Company
MINNEAPOLIS 7, MINNESOTA

BREVITY—Identify by IEN - 12199 If you write the maker

BREVITY—Identify by IEN - 12200 If you write the maker

PABCO MASTIPAVE

AMERICA'S NO. 1 LOW-COST LONG-LIFE FLOOR COVERING

"Pabco Mastipave floor covering is installed in our main trucking aisles and also in our men's and women's rest rooms," says Jesse Nitka, Factory Manager, B. Kuppenheimer & Co., Inc. —one of the nation's foremost clothing manufacturers.

"We are very well satisfied with the way these Pabco Mastipave floors are standing up under traffic. They look as well today as the day they were laid. We would not hesitate to recommend this type of flooring to anyone desiring a good wearing floor surface."

TAKES THE POUNDING OF MILLIONS OF FEET

Every building needs Pabco Mastipave! For 25 years, the Nation's blue chip industries, public carriers, hospitals, public school systems have demonstrated that Pabco Mastipave—both regular and non-slip Grip-Tread types—costs little, looks good, wears even better! Grip-Tread Mastipave is sold in roll goods only—regular Mastipave is available in roll goods and tiles.

PABCO

SEND NOW FOR THE FULL STORY OF MASTIPAVE!

PABCO PRODUCTS, INC.
New York 16•Chicago 54•San Francisco 19
(Mail to Dept. E, nearest office)

GENTLEMEN: Without cost or obligation to me, please send folder, "Every Building Needs Pabco Mastipave."

NAME _____ CITY _____
ADDRESS _____ STATE _____

BREVITY—Identify by IEN - 12201 If you write the maker

Fastening sheet metal to wood . . . to masonry?

For the better way . . . rely on P-K

Hardened SCREWNAILS

Screw strength and nail speed in one fastening — makes sense, doesn't it? Yes, and it saves time and materials, too. Parker-Kalon Screwnails are *hardened* . . . pierce metal that would bend ordinary nails. And they have over four times the holding power — that means fewer screwnails are needed to do the job.

Hardened MASONRY NAILS

You simply drive them with a hammer into a drilled hole of the proper size. Saves work, time and money. Parker-Kalon Hardened Masonry Nails can be applied more quickly than lead anchors and expansion bolts, hold securely and cost less. In softer masonry, these simpler, speedier fasteners can be driven without holes.

SEND FOR BOOKLET
Parker-Kalon Corp.
200 Varick St.
New York 14, N.Y.

PARKER-KALON
FASTENING DEVICES
MAKERS OF THE ORIGINAL SELF-TAPPING SCREWS

BREVITY—Identify by IEN - 12202 If you write the maker

Pliobond

"on deck" to solve adhesive problem

USE PROVED Products

No adhesive failures between deck and non-skid coating since Jeffries Boat Works, Venice, California, switched to PLIOBOND — applied by spraying thin coat on wood deck.

SALT spray, abrasion underfoot and deck movements made every adhesive used to anchor antislipping deck tread on the wooden decks of these motor launches fail—*until the maker switched to* PLIOBOND.

Even under these tough conditions, PLIOBOND gives excellent bond strength, combines firmness and permanent flexibility, resists corrosive salt solutions and is highly waterproof.

PLIOBOND — Goodyear's rubber-like thermoplastic adhesive — bonds like or unlike substances — resists weak alkalies, acids, petroleum and coal tar solvents, lubricating oils, alcohols and most chlorinated solvents. Try PLIOBOND wherever you have a bonding problem — it's simply applied, long-lasting. Write for full details today to:

Goodyear, Chemical Division
Akron 16, Ohio

GOODYEAR

We think you'll like "THE GREATEST STORY EVER TOLD" Every Sunday — ABC Network

Pliobond—T. M. The Goodyear Tire & Rubber Company, Akron, Ohio

BREVITY—Identify by IEN - 12204 If you write the maker

SANDING . . Disc type machine to apply on metals, plastics, wood

Source: MAX MFG. CO.
136-40 Stockton Ave., San Jose 11, Calif.

Table locks in place

New assembly of the company's disc-type sanding machine, previously described IEN-5773-39, mounts a 20-in. disc back of a 10 by 21-in. table. The table is assembled on trunnions for adjustment to any angle between 45 deg. above and below horizontal. The table also can be lowered to clear the disc. It carries a groove to take a standard protractor.

The machine weighs 266 lb. without the motor which can be supplied to specification in ¾ to 2-hp. rating at 1,140 rpm. Weight with a 1-hp. motor is about 400 pounds. Connection is provided at the bottom of the housing for a suction blower and dust-collector bag, both of which the company is prepared to supply.

BREVITY—Identify by IEN - 12205 If you write the maker

LUBRICATING . . Conveyor chain oil for steady drip feed by a dispenser

Source: PEERLESS CHEMICAL CO.
3855 Oakman Blvd., Detroit 4, Mich.

Specifications on request

Lube Eze trade names a new lubricating oil particularly for use on conveyor chains. It is intended for feed by a dispenser that drips is evenly on the chain links as they move along. Packaging is in 5, 30 and 55-gal. containers. List price is 18 cents per pound based on a 55-gal. 450-lb. drum with an additional $5 deposit for the drum which is returnable for credit.

BREVITY—Identify by IEN - 12206 If you write the maker

WASHROOMS . . Women's urinal for standing use, need not be touched

Source: AMERICAN RADIATOR & STANDARD SANITARY
P. O. Box 1226-A, Dept. SR, Pittsburgh 30, Pa.

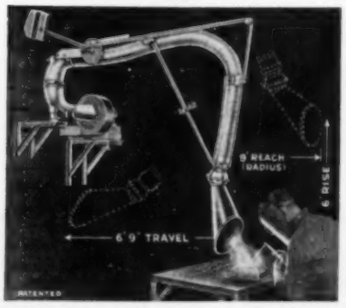
Clean and convenient

New design for wall assembly has been added to the Sanistand urinal for women, previously described IEN-4251-50. The new unit has been designed for easy installation and maintenance. It is made of vitreous china in a variety of pastel shades. Like the original design it has powerful flushing action and can be used as a regular water closet. It has no seat, need not be touched by the user. It is flushed by depressing a foot pedal.

Bulletin, "Sanistand Fixture", 6 pages, provides exterior and sectional illustrations, includes description and instructions for installation and operation.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 12207 If you write the maker



RUEMELIN Fume Collector

Removes Welding Fumes at the Source . . .

Why continue to let your employees inhale welding fumes? You can solve the problem quickly and efficiently by installing a Ruemelin Fume Collector. It produces a powerful suction that draws out noxious gases, smoke and heat at the source. Guards employee health, resulting in less welder fatigue, therefore, greater plant output. Clears shop air with minimum loss of building heat. Covers maximum welding area vertically, horizontally and by circle swing. Shipped assembled, easy to install. 9 ft. and 15 ft. sizes (radius of swing). Write for Bulletin 37-D.

These Fume Collectors are particularly helpful in winter months when doors and windows are closed.

RUEMELIN MFG. CO.
3843 N. PALMER STREET MILWAUKEE 12, WIS., U. S. A.
MANUFACTURERS AND ENGINEERS — SAND BLAST AND DUST COLLECTING EQUIPMENT — WELDING FUME COLLECTORS

A 5250-½R5

BREVITY—Identify by IEN - 12208 If you write the maker

How to save Labor and Money by Centralizing Lubrication

FOR more than 20 years Farval has been saving manpower and money for users. Through efficient, dependable lubrication of machines and industrial equipment of all kinds, Farval saves 4 ways: It saves oiling labor, it saves lubricant, it reduces bearing expense, it eliminates down time.

The Farval System is a positive mechanical method of delivering oil or grease under pressure to a group of bearings from one Central Station, in exact quantities, as often as desired. It consists of a central pumping unit, two main supply lines and a measuring valve for each bearing.

Bulletin 25 gives you the facts and figures to apply to your own lubrication problems. The Farval Corporation, 3258 East 80th St., Cleveland 4, Ohio.

Write for FREE Bulletin 25

BREVITY—Identify by IEN - 12209 If you write the maker

Calling all users of Speed Reducers!

Get the new **Cleveland Book** *FREE*

Bulletin 130 gives rating tables, dimensions and other data you need in selecting the right sizes in standard worm-gear speed reducers. Ask for your copy.

New bulletins on other types of Cleveland worm gear drives and worm-gear sets also available. Outline your needs. The Cleveland Worm & Gear Co., 3258 E. 80th St., Cleveland 4, Ohio.

CLEVELAND Worm Gear *Speed Reducers*

BREVITY—Identify by IEN - 12210 If you write the maker

POLISHING PROBLEM?

Switch to Black & Decker POWER!

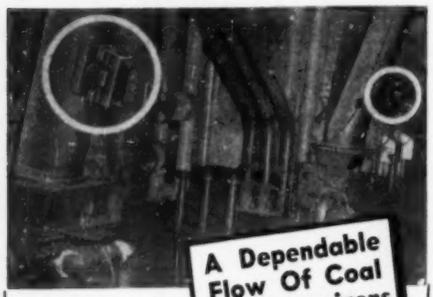
B&D POLISHERS
2 models: 7" Standard and 7" Automatic, equipped with exclusive automatic polish feed

B&D POLISHERS speed up polishing of stainless steel, furniture, mirrors, metal cabinets and many other industrial products, in production or maintenance work. They do finer, faster jobs because they give you such quality features as: B&D-built universal motors for dependable service; match-lapped, spline-mounted spiral bevel gears for smooth, quiet flow of power; perfect balance for easier handling. See your nearby B&D Distributor for a demonstration. Write for free catalog to: THE BLACK & DECKER MFG. CO., 615 Pennsylvania Ave., Towson 4, Md.

LEADING DISTRIBUTORS EVERYWHERE SELL

Black & Decker PORTABLE ELECTRIC TOOLS

BREVITY—Identify by IEN - 12211 If you write the maker



A Dependable Flow Of Coal To Pulverizers

V-75 Vibrators on coal chutes eliminate arching and plugging that results in costly delays.

SYNTRON

"Pulsating Magnet"

ELECTRIC VIBRATORS

With Variable Control of Power

3600 controllable vibrations per minute keep the most stubborn materials flowing freely thru bins, hoppers, chutes and screens. . . WITHOUT THE HAMMERING AND RODDING AND POKING THAT WASTES MANPOWER AND DAMAGES EQUIPMENT. Vibrators for small hoppers up to large storage bunkers.

Write To —

SYNTRON CO.
410 Lexington Ave. Homer City, Pa.

BREVITY—Identify by IEN - 12212 If you write the maker

Reduce Power Distribution Costs (Save copper too!) with Wagner Dry-Type Transformers

You can save money, save copper, and improve voltage regulation by bringing the *right* voltage to the load center with Wagner Dry-Type Transformers. They are safe to use—without fireproof vaults or other special protection—even where fire hazards are present. They provide steady voltage with minimum line losses. They are compact and light in weight—economical to install and easy to move when changes in plant facilities are necessary.

Wagner Dry-Type Transformers are available in single-phase, two coil units (Type AE) in sizes 1.0 to 200 kva and in three-phase, two coil units (Type AP) in sizes 3.0 to 300 kva. Both types 600 volts and below.

These dry-type transformers can be used in many lighting and power applications. Bulletin TU-90 gives many suggestions that you can use—write for your copy.

Wagner Electric Corporation 1891 1951

6414 PLYMOUTH AVENUE
ST. LOUIS 14, MO.

ELECTRICAL EQUIPMENT AND AUTOMOTIVE BRAKE PRODUCTS

BREVITY—Identify by IEN - 12213 If you write the maker

SIMPLE LOW-COST BIN-FLO AERATOR UNITS
KEEP BULK MATERIALS MOVING

Finely ground dry materials in storage often lose air content and pack or bridge, thus losing capacity to flow.

BIN-FLO units diffuse low-pressure air through such materials, preventing packing and maintaining or restoring natural flow.

Easily installed in chutes, bins, hoppers, etc. Can be automatically controlled by BIN-DICATOR bin level indicators. Low first cost; low operating cost. Used in many industries. Fully guaranteed. Send for folder.

BIN-DICATOR Bin Level Indicator

BIN-DICATOR—"The Eyes of the Bin" watches material levels automatically and reports to central control point. Send for free book.

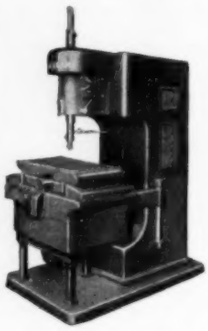
NEW 20-PAGE BOOK FREE

THE BIN-DICATOR CO.
13946-B Kercheval • Detroit 15, Mich.

BREVITY—Identify by IEN - 12214 If you write the maker

THREADING . . Vertical tapping machine "floats" big work on ball bearing table

Source: CLEVELAND TAPPING MACHINE CO.
1203 Camden Ave. S. W., Canton 6, Ohio



Lead screw control

Type ER is a new assembly in the company's line of lead-screw type of tapping machine. Holes can be tapped in any location in a work area measuring 24 by 40 in. The machine provides a 26½-in. throat, 18 in. of vertical table travel, 5 in. of spindle feed. Base dimensions are 64 by 38 inches. Overall height is 100 inches. The work table measures 28 by 42 inches. The machine is available in a number of sizes for holes from ¾ to 2¾ in. based on National Coarse threads in mild steel.

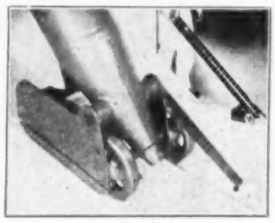
The table is assembled on ball-bearing raceways for lateral movement by hand to 20 in. on either side of center, forward through 13 in. and to the rear through 11 inches. Upon bringing the work into tapping position with these movements the operator presses a pushbutton to cause a solenoid brake to lock the position and hold until released by pushing another button. The table is moved up and down by operating directional levers connecting to the drive control for three Acme-thread screws and bronze nuts mounted on ball bearings. The drive sprockets are adjustable in their positions to permit exact leveling.

Construction includes a motor-driven pump to circulate coolant from an 8-gal. tank in the machine base. The Cleveland Tapping Machine Company operates as a subsidiary of Automatic Steel Products, Inc.

BREVITY—Identify by IEN - 12215 If you write the maker

MARKING . . Traffic line machine feeds paint to brush by gravity

Source: H. C. SWEET CO.
12085 Woodbine Ave., Detroit 28, Mich.



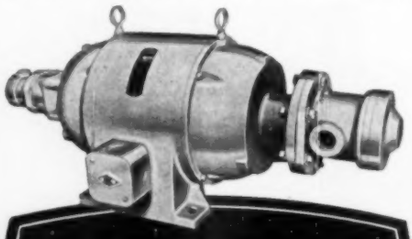
About $99

Paint is contained in the cylindrical barrel of this new design in the company's Florline machine, previously described IEN-3216-47. The paint flows by gravity to a sprender brush located between a pair of side guides. Flow can be adjusted to accommodate the operator and the job. The machine holds 1½ gal. of paint, lacquer or whitewash, sufficient for about 1,200 ft. of 4-in. line.

The brush is assembled so it can be lifted from the floor to retrace a line, to make skip lines or to roll to another area without making any mark. A guide finger assists in following a line. Lines can be made tangent to partitions, aisles, walls.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 12216 If you write the maker



NEW HYDRAULIC PUMP MOTOR features standardized system for

DIRECT ENDBELL MOUNTING

This new Reuland Hydraulic Pump Motor is factory adapted to the direct, endbell mounting of all makes of hydraulic pumps.

AUTOMATIC PRECISION ALIGNMENT — All motors are supplied with factory machined endbell flanges, pre-engineered to fit the registers on the pump mounting flange.

LOWER INSTALLATION COSTS — (1) only one unit to mount. (2) No time wasted in adjusting to proper alignment. (3) Fabrication of pump mounting platform is eliminated.

LOWER OPERATING COSTS — Pump life is almost doubled when alignment is perfect.

VERSATILE COMBINATIONS — Supplied with pump flange mounts on one or both endbells.

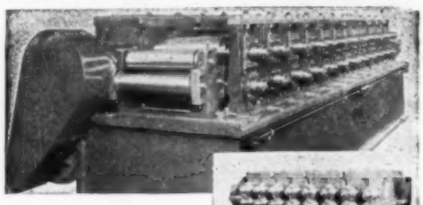
Write for new Engineering Folder No. 9000-12

REULAND ELECTRIC COMPANY
Alhambra, California • Representatives in all principal cities

BREVITY—Identify by IEN - 12217 If you write the maker

RAFTER COLD METAL ROLL-FORMING MACHINES

Correct Design for Maximum Efficiency



Typical Rafter Roll-Forming Machines illustrating the wide range of sizes and capacities, covering the entire sheet-metal forming field.

Patented balanced gear drive mounted on roller bearings distributes power efficiently to each pair of rolls . . . Gear ratio is a continuous reduction from drive shaft to roll shaft, quiet, efficient and compact. This drive consumes less power than any other type . . . Exclusive design permits greatest vertical adjustment of the upper roll spindles, without the aid of square gearing or small complicated gears . . . Design permits quickest and most accurate change of rolls possible. Shafts always remain parallel. Adjusting screws connect front and rear bearings . . . Low power consumption, lasting accuracy, longer roll life, and higher output are made possible by these and many other features.

RAFTER MACHINE COMPANY, INC.
SINCE 1917

249 Stephens Street • Belleville 9, N. J.

GANG SLITTERS and PRESS BRAKE DIES

BREVITY—Identify by IEN - 12218 If you write the maker

If you have any of these problems in your connections

✓ VIBRATION
✓ MISALIGNMENT
✓ FLEXATION
✓ EXPANSION and CONTRACTION

solve them with CMH FLEXIBLE METAL HOSE

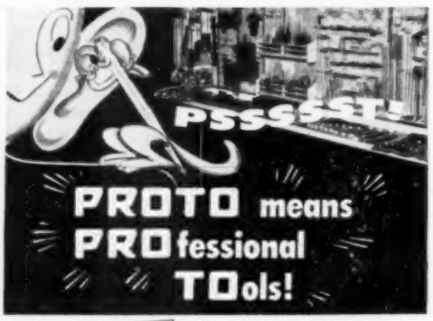
Scores of troublesome connection problems where the above conditions exist are effectively solved with CMH Flexible Metal Hose. Manufactured in a variety of types and metals, CMH Flexible Metal Hose is available for pressures from vacuum to 12,000 psi (burst); temperatures from sub-zero to 1600° F. Write for literature, mentioning the types of connection problems you have.

CHICAGO METAL HOSE CORPORATION
1333 S. Third Ave., Maywood, Illinois

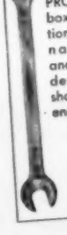
Manufacturers of Flexible Metal Hose, Metallic Bellows and Bellows Assemblies and Expansion Joints for Piping

CMH ONE DEPENDABLE SOURCE for every flexible metal hose requirement

BREVITY—Identify by IEN - 12219 If you write the maker



TOOLAGRAM



Redesigned PROTO open end, box and combination wrenches have narrower jaws and heads, stronger designs, smoother shanks, better finish; engineered lengths.

Our puncharoo is boasting that PROTO tools are designed and manufactured for professionals—that they fit right, handle easily and stand hard work for years. For truly *professional* tools, see your PROTO dealer. Send 10¢ for 68-page catalog to

PLOMB TOOL COMPANY
2271F Santa Fe Ave.,
Los Angeles 54, Calif.

5181

PROTO TOOLS LOS ANGELES

BREVITY—Identify by IEN - 12220 If you write the maker

Get the ONE flexible coupling that gives you single chain simplicity plus divided rollers

ONLY Link-Belt "RC" Flexible Couplings give you both. Divided rollers of Precision Steel Roller Chain equalize load . . . maintain proper balance at high speeds . . . adjust to reasonable misalignment and end float. Single-chain width means simplicity and economy.

There's a Link-Belt Roller Chain Coupling for ratings from fractional to 1000 hp. For complete information, write for Folder 2363.

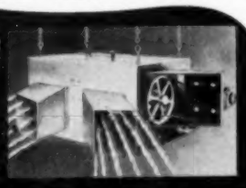
"RC" Couplings available in 30 sizes, ⅜ to 12 in. bore.

LINK-BELT
"RC" FLEXIBLE COUPLINGS

LINK-BELT COMPANY: Chicago 9, Indianapolis 6, Philadelphia 40, Atlanta, Houston 1, Minneapolis 5, San Francisco 24, Los Angeles 33, Seattle 4, Toronto 8, Springs (South Africa). Offices, Factory Branch Stores and Distributors in principal cities. 52.524

BREVITY—Identify by IEN - 12221 If you write the maker

HERE'S YOUR ANSWER TO LARGE AREA SPACE HEATING!



CHROMALOX
Blower Type
UNIT HEATERS

FOR HEAVY-DUTY HEATING IN FACTORIES, WAREHOUSES, OFFICES

Ceiling mounted CHROMALOX Electric Blower-Type Heaters are your quick, easy answer to space heating! Twin centrifugal fans, driven by a 3-phase motor, distribute warmth evenly over large areas. Air ducts can be used to convey heated air to desired locations. Automatic thermal cutout assures protection against overheating. 51,180 to 136,480 BTU output per hour.

HAVE A HEATING PROBLEM OF ANY KIND?

Then write for Catalog 50. It's loaded with information on many of the 15,000 types, sizes and ratings of Chromalox Heating Units and Equipment.

EDWIN L. WIEGAND CO., 7505 THOMAS BLVD., PITTSBURGH 8, PA.
See Chromalox Radiant Heaters Advertisement, Page 5

CHROMALOX 10-8

ELECTRIC HEAT FOR MODERN INDUSTRY

BREVITY—Identify by IEN - 12222 If you write the maker

THERMO-MAT
keeps feet warm!

ONLY $11.95 DELIVERED

TAKES DISCOMFORT OUT OF COLD FLOORS!

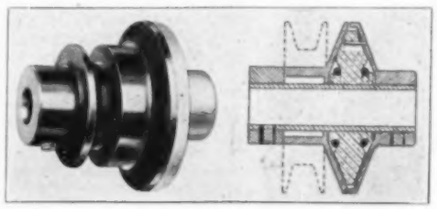
THERMO-MAT radiates live penetrating heat from floor to knees! Insures foot and leg comfort wherever you stand or sit—in cabs, booths, at desks, check stands, counters and countless other locations! Melts ice and snow on doorsteps, etc. Safe and effective even on damp concrete. Economical—operates for a few cents per day. Reversible, long-lived neoprene rubber compound cover, lasts for years. Measures 14" x 22". Plugs into any 110-220 Volt electrical outlet. Maintains uniform temperature. Order by mail today! $11.95 delivered! Thoroughly tested. Thousands used. Performance guaranteed! Free Folder!

THERMO-MAT CO.
814-1 South Robertson Blvd., Los Angeles 35, Calif.

BREVITY—Identify by IEN - 12223 If you write the maker

DRIVE . . Centrifugal clutch employs wedging weights to engage

Source: SWAN CLUTCH & EQUIPMENT CO.
1121 S. 12th St., Milwaukee 4, Wis.



Outside and schematic section

Capacities range from ¾ to 15 hp. for this new Moe-Re-Set clutch in which segmental weights are held inward in disengaged position by two garter springs. They move out by centrifugal force to provide wedge action between the driving and driven sides of the clutch housing. The clutch is designed to mount on a motor shaft where it permits the motor to come up to near driving speed prior to engagement.

Two types are designed for operation at constant speed in engaged position and for intermittent or indexing action. Shaft diameters range from ½ to 1⅝ inches. Overall length to mount a single V-belt sheave is between 2 and 3½ inches. The idling portion on which the sheave is mounted can be specified to ride on oilless bearings or ball or roller bearings on the clutch sleeve which is secured to the driving shaft.

BREVITY—Identify by IEN - 12224 If you write the maker

TESTING . . Electronic instrument detects and localizes noise, vibration

Source: ANCO INSTRUMENT DIVISION
4252-56 Arthington St., Chicago 24, Ill.

Lists at $85

Elec-Detec is a new battery-operated electronic instrument that is actuated by a metal probe which the operator places in contact with a suspected source of noise or vibration. The equipment is inert to airborne sound. It transmits impulses electrically to earphones through an amplifier carried by the operator. A volume control on the amplifier permits adjustment.

Overall frequency is in a range between 100 and 4,000 cycles in a variation not greater than two decibels. It also covers the range between 4,000 and 8,000 cycles within plus or minus three decibels. The probe is mounted in a light-weight plastic handle, the metal rod at the end being removable for replacement with a longer rod either straight or curved to meet given requirements. The amplifier is enclosed in a metal housing that is fitted into a leather carrying case. Battery requirements call for one 67½-volt B-type unit and two 1½ volt A-type units. Noises can be located in bearings, rotating and reciprocating shafts, differentials, gear housings, traps, valves, instruments.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 12225 If you write the maker

Q: Name a good screen cloth

A: HEWITT-ROBINS Screen Cloth

BECAUSE you increase the time between screen cloth changes—on *any make* of screen!

BECAUSE Hewitt-Robins Screen Cloth is made of Super-Gyraloy, the specially blended alloy steel wire that's the toughest, hardest screening surface ever developed.

BECAUSE Hewitt-Robins Super-Gyraloy Screen Cloth comes in the *weave* you want . . . the *size opening* you need.

BECAUSE its heat treatment and microstructure make Super-Gyraloy highly resistant to abrasion without sacrificing ductility. You can actually bend a wire of this cloth around its own diameter without fracture.

SEND TODAY for Bulletin No. 113-A. Fully describes Hewitt-Robins Super-Gyraloy Screen Cloth, 3/16" to 6" openings, made from #12 gauge wire to 5/8" rod in square and rectangular openings, flat top and non-blind weaves. Also in Gyraloy (spring steel) stainless steel, Monel metal, brass or enamel coated in any standard diameter of wire. Robins Conveyors Division, 270 Passaic Ave., Passaic, N. J.

HEWITT-ROBINS SCREEN CLOTH

BREVITY—Identify by IEN - 12226 If you write the maker

Thousands of Dollars SAVED

by adopting Machine Bundling

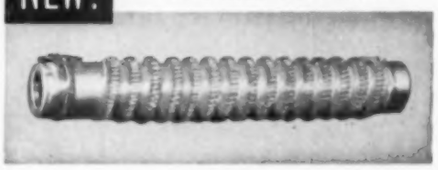
With one of our Bundling Machines, you can wrap up to 24 bundles a minute in dozen or half-dozen lots—and just one operator is needed! Hundreds of cardboard boxes or fibre containers are replaced by one roll of economical kraft paper. . . Bundles are surprisingly strong. . . Now used for many different products. Machine is easily adjusted for various sizes.

Write for Literature

PACKAGE MACHINERY COMPANY
SPRINGFIELD, MASSACHUSETTS
NEW YORK · CHICAGO · BOSTON · CLEVELAND · ATLANTA · DALLAS · DENVER · LOS ANGELES · SAN FRANCISCO · SEATTLE · TORONTO · MONTREAL

BREVITY—Identify by IEN - 12227 If you write the maker

NEW! ALL THE RIBFLEX ADVANTAGES ····IN HIGHER WATT RATINGS



Faster heat dissipation. Greater space saving.

New models of Ward Leonard's Ribflex Resistors—rated 85 to 95% higher than same-sized ordinary wire-wound resistors—are made in 400, 500 and 550 watt sizes. Lengths: 8½, 10½ and 11¾ in., respectively.

Reflexed metal alloy ribbon wound on edge and permanently secured to core gives greater area for heat dissipation—allows increased temperature rise. The new, larger size Ribflex units are your answer for high current, low resistance applications. Complete range now 75 to 550 watts.

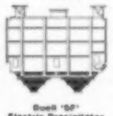
Write for Bulletin 19. WARD LEONARD ELECTRIC CO., 33 South Street, Mount Vernon, N. Y. Offices in principal cities of U. S. and Canada.

WARD LEONARD ELECTRIC CO.
Reliable Engineered Controls Since 1892
RESISTORS · RHEOSTATS · RELAYS · CONTROL DEVICES

BREVITY—Identify by IEN - 12228 If you write the maker

buell KNOWS DUST RECOVERY

Buell Van Tongeren Cyclone



Buell "DC" Electric Precipitator

Combination Cyclone-Precipitator Unit

WHENEVER industrial engineers discuss valuable dust recovery, Buell is the big name mentioned. For Buell offers knowledge and capabilities in dust recovery second to none. Only Buell Precipitator recovers ultra-fine dust with "Stedi-flow" dust fall—continuous cycle rapping that means constant peak efficiency. Buell large diameter cyclones do not plug, require next to no maintenance. Complete details on both types of equipment are available. Buell Engineering Co., Dept. 22-L, 70 Pine St., New York 5, N. Y.

buell
Engineered Efficiency in Dust Recovery

BREVITY—Identify by IEN - 12229 If you write the maker

BREVITY—Identify by IEN - 12230 If you write the maker

BREVITY—Identify by IEN - 12231 If you write the maker

Reduce Machine Noise and Vibration 60%-85%!

ANCHOR MACHINES ON UNISORB®

Yes, and UNISORB machine-mounting requires no bolts . . . no lag screws . . . no destructive floor-drilling. It's the modern way to anchor machines . . . saves installation costs . . . lasts for years and years with no maintenance . . . easy to replace . . . prevents vibration damage to floors, buildings and machinery.

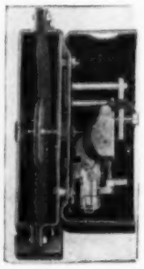
Today, write for your free copy of "Why It Pays To Anchor Your Machines with UNISORB."

The FELTERS Company
210-1 SOUTH STREET
BOSTON 11, MASS.

BREVITY—Identify by IEN - 12232 If you write the maker

SWITCH . . Diaphragm actuated by change in differential pressure

Source: MERCOID CORP.
4203 Belmont Ave., Chicago 41, Ill.



Type PPQ sectioned

Overall range in which this new mercury switch assembly is available starts at 30 or 6 in. of vacuum and extends to 6 or 30 in. of pressure. The assembly employs a flexible diaphragm acting as the division between two chambers that connect to the vacuum or pressure sources. Movement of the diaphragm actuates one or two hermetically-sealed mercury switches of the company's own design. Each rates 20 watts on 110-volt ac. or dc. with corresponding motor capacity at 1/60 hp. The switches can be connected to open or close circuits together, in sequence or in opposition.

BREVITY—Identify by IEN - 12233 If you write the maker

SOLDERING . . Resin core wire melts, wets, flows quickly on the work

Source: KESTER SOLDER CO.
4199-03 Wrightwood Ave., Chicago 39, Ill.

Ask for sample

No. 44 is a new resin-core solder in wire form in which the resin is non-corrosive and electrically non-conductive. The solder melts, wets the work surface and flows all in one continuous action. The material conforms with Army-Navy-Air Force Specifications MIL-S-6872 and the U. S. Air Force Specifications No. 41065-B-Method-31, as well as Federal Specifications QQ-S-571b.

BREVITY—Identify by IEN - 12234 If you write the maker

DRYING . . Metal container and guard for glass vacuum desiccator

Source: FISHER SCIENTIFIC CO.
719 Forbes St., Pittsburgh 19, Pa.

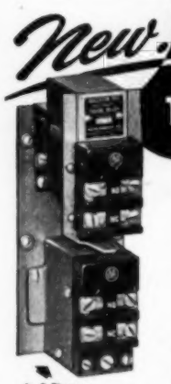
Lists at $14.50

Desiguard, Junior, is a new two-part metal container to take a Pyrex or other glass vacuum desiccator to 160 mm. for handling and protection against breakage. The unit eliminates the possibility of injury from flying glass. The two halves fit together to form a hollow cylinder which encloses the desiccator except for an opening in the top center.

The upper section is perforated. The lower section is solid at the bottom so liquid from a broken desiccator is retained. Dimensions are about 8 in. in diameter by 9 in. in height. Finish is aluminum.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

BREVITY—Identify by IEN - 12235 If you write the maker



New . . . BULLETIN 849 PNEUMATIC TIMING RELAY

Good for Millions of Operations

- **For "dash up" or "dash down" operation**
- **Available for NEMA Type 1, 4, 7, and 9 applications**

This new, compact, solenoid type, pneumatic timing relay utilizes a synthetic rubber bellows for controlling the tripping time. Has a range of from 10 cycles to 3 minutes, and an accuracy of approximately 10%. Its setting is easily adjustable over a wide range, and the relay resets instantaneously. This timer will provide satisfactory operation irrespective of temperature, humidity, or vibration conditions. Write for information. Allen-Bradley Co., 1312 S. Second St., Milwaukee 4, Wis.

A-C Timer with Auxiliary Contacts
D-C Timer

ALLEN-BRADLEY
QUALITY
MOTOR CONTROL

BREVITY—Identify by IEN - 12236 If you write the maker

Give 'em the BUM'S RUSH!

Don't let Dirt, Dust, and Grit spoil the working efficiency of your machinery and equipment. Rush 'em out of every crack and crevice with a CLEMENTS-CADILLAC blower-suction cleaner. Easy to use, economical. Ask your mill supply dealer.

Eligible under C.M.P. regulations.

BREVITY—Identify by IEN - 12237 If you write the maker

HOW TOOL CRIB CONTROL WILL CUT YOUR TOOL COSTS TOO

New 12-page booklet tells how 20 plants stopped loss and theft of tools, reduced crib inventories, cut idle waiting time of men and machines, reduced breakage, stopped disputes—and more, too, with McCaskey Tool Crib Control. Their reports show savings and service improvements that can be made in your plant at a surprisingly small cost.

Write today for your copy of "How Tool Costs Were Cut 12 Ways in 20 Plants"—Booklet A-502 IEN.

The McCaskey Register Company, Alliance, Ohio

McCASKEY INDUSTRIAL CONTROLS
PRODUCTION • TOOLS • INVENTORY • COSTS • MAINTENANCE

BREVITY—Identify by IEN - 12238 If you write the maker

SIMPLIFY EQUIPMENT CONTROL WITH Ledeen CYLINDERS

For straight line power movement. Air, oil or water operation. Medium Duty, Heavy Duty, and Super Duty models.
Write for Bulletin 500.

Ledeen VALVES

For actuating air or hydraulic cylinders. 14 different models for 5 different cycles, in 6 sizes. Hand, foot and power operated.
Write for Bulletin 510.

Ledeen VALVE ACTUATORS

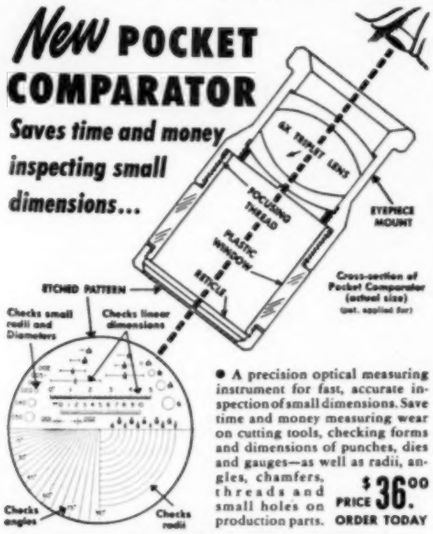
For actuating any make, size and type of valve, against any line pressure, on any fluid medium, and with any pressure available. For on-and-off or positioning service. Positive in action, economical in cost.
Write for Bulletin 512.

Ledeen Mfg. Co.
1602 San Pedro St.
Los Angeles 15, Cal.

BREVITY—Identify by IEN - 12239 If you write the maker

New POCKET COMPARATOR

Saves time and money inspecting small dimensions...



● A precision optical measuring instrument for fast, accurate inspection of small dimensions. Save time and money measuring wear on cutting tools, checking forms and dimensions of punches, dies and gauges—as well as radii, angles, chamfers, threads and small holes on production parts.

PRICE $36.00 ORDER TODAY

a product of BELL & HOWELL CO. distributed by

Write for FREE descriptive folder

See Your National Tool Co. Representative or Local Jobber

NATIONAL TOOL CO.

11220 Madison Avenue Cleveland 2, Ohio

BREVITY—Identify by IEN - 12240 If you write the maker

SPREADS THE STRAIN!

The RAMSEY "Diagonal" Flexible Coupling

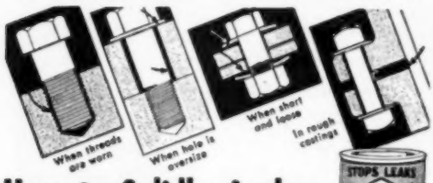
Note how the steel pinions are cut diagonally to stagger the shear point of the chain pins and utilize the full width of the chain. This patented RAMSEY design gives greater strength to the assembly, assures longer life under greater loads! Easily installed, aligned, and disconnected. Available in ten sizes, from ½" bore, in capacities to 600 hp. Write today for literature giving dimensions, capacities, list prices.

SILENT CHAIN DRIVES—FLEXIBLE COUPLINGS

RAMSEY CHAIN COMPANY, INC.

5152 BROADWAY • ALBANY, N. Y.

BREVITY—Identify by IEN - 12241 If you write the maker



How to Solidly Anchor LOOSE BOLTS

Bolts with worn threads — undersize bolts in oversize holes — bolts passing through thin walls — bolts holding ill-fitting cast flanges — all can be tightened firmly with quick-setting Smooth-On No. 1 Iron Cement. Use it, too, to lock nuts tight, and to cover and protect countersunk bolt heads in metal or wood. These repairs stay tight because Smooth-On expands slightly as it hardens. Buy Smooth-On No. 1 in 7 oz., 1 lb., 5 lb., 20 lb., or 100 lb. size and keep it handy. If your supply house hasn't Smooth-On, write us.

FREE REPAIR HANDBOOK

40 Pages filled with time-saving, money-saving repairs on plant, shop and home equipment made with No. 1 and other Smooth-On Cements. Drop us a line for YOUR free copy.

SMOOTH-ON MFG. CO., Dept. 1
570 Communipaw Ave., Jersey City 4, N. J.

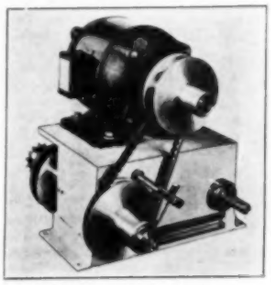
Do it with SMOOTH-ON

THE IRON REPAIR CEMENT OF MANY USES

BREVITY—Identify by IEN - 12242 If you write the maker

DRIVE . . Variable speed unit, compound assembly, 50 to 1 speed ratio

Source: SPEED SELECTOR INC.
118-A Noble Court, Cleveland 13, Ohio



No tendency to hunt

Compound reduction between the motor and the output shaft is provided in this new assembly of the company's V-belt drive by a countershaft that mounts two variable-pitch sheaves between the motor and the output shaft. By operating a control connecting to a sprocket on the countershaft, pitch can be changed in these two sheaves and corresponding pitch changes made in the motor and the output connection for an overall ratio of 50 to 1.

Capacities range from ½ to 10 hp. The drive takes a standard NEMA motor of required electrical characteristics. Sheaves and shafts are mounted on factory-lubricated sealed ball bearings. The V-belts are stretchless steel-cable units in standard or static-proof construction. Overall dimensions of the 5-hp. assembly are 34 by 14 by 28 inches. The company is prepared to supply larger units to specification.

BREVITY—Identify by IEN - 12243 If you write the maker

CORROSION PROOFING . . Chemical produces protective vapor for metal

Source: SHELL OIL CO.
50 W. 50th St., Room 4237, New York 20, N. Y.

Application data upon request

Amine nitrite in crystal form known as VPI, vapor phase inhibitor, is now available from the company to protect finished metal surfaces, assemblies, instruments and finished products through processing, in storage and during shipment. The crystals are slightly volatile at atmospheric pressure. They give off a vapor which is carried by convection and diffusion to condense in a thin layer on the metal surfaces.

Application is by placing a small quantity of the powder-like substance in a package enclosing the parts to be protected as in an envelope containing ball-bearing races, by blowing it into an area to be protected, as through the spark plug holes and into cylinder bores and other parts of engines, by putting it into a water or alcohol solution for dip protection of metal parts during and between processing steps. The metal parts are then covered in tote boxes so the vapor has an opportunity to move thoroughly over and surround the work. It is unnecessary to use oil or grease as a corrosion inhibitor so the finished metal parts are ready for use immediately without cleaning.

Solutions of 2 to 4 per cent are suited to protect processed metal parts. One gram of the material is sufficient for a cubic foot of metal parts or equivalent surface for periods up to a year. The crystals can be employed also as a corrosion inhibitor in hydraulic fluids and in water soluble paint. They have been employed for some time to impregnate paper and cartons employed in packaging metal products, as previously described IEN-10-49, to protect in shipping and storage.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 12244 If you write the maker

The "One Best Way" for Many Materials-Handling Jobs

MORRIS Centrifugal SLURRY PUMPS

Coal mines, cement mills, glass works, stone-cutting plants, ore-treating plants, and a large array of chemical plants have found Morris Centrifugal Slurry Pumps to be the "one best" solution to many of their difficult materials-handling problems. Particle size is the only limiting factor, and this can be much larger than you think. Even thick sludges and fluids with viscosities as high as 7,800 SSU flow smoothly through the pump, insuring long and economical life of the wearing parts.

Lower Cost Per Ton or Million Gallons

Power, labor and maintenance costs are outstandingly low when figured on a year-in-year-out basis. The accuracy of the complete Morris assembly, the smooth, vibration-free operation, and the remarkable wearability of parts, all give maximum value for the dollar invested. Ask our engineers about your special problems, or write for Bulletin No. 181.

MORRIS MACHINE WORKS
Baldwinsville, N. Y.
Branch Offices in Principal Cities

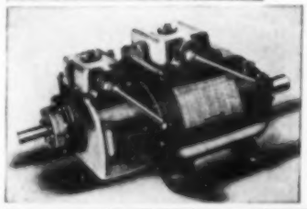
MORRIS CENTRIFUGAL PUMPS

BREVITY—Identify by IEN - 12245 If you write the maker

plate or platform mounting

9000-B (1-5 H. P.) 5 H. P. capacity with input speed of 900 r. p. m. Gear Ratios 1:1 - 2:1 - 3:1 - 4:1 Special ratios at extra cost.

8100-B (5-10 H. P.) 10 H. P. capacity with input speed of 900 r. p. m. Gear Ratios: 1:1 - 2:1 - 3:1 - 4:1 Special ratios at extra cost.



9300 (30 H. P. capacity with input speed of 900 r. p. m.) 8 speed Changes in Geometric Progression of 1.29 (Total reduction of 6:1).

Send for catalog and complete information.

up to 50 h. p.

WESTERN TRANSMISSIONS

WESTERN MANUFACTURING CO., 5255 SCHAFTER • DETROIT • MICHIGAN

BREVITY—Identify by IEN - 12246 If you write the maker

Lick "down-time" with YALE 3-POWERED ECONOMY

Exclusive! Increases clutch life! Gives unfailing smooth, full power at any speed even on steep ramps. It's the same *fluid* coupling used on fine passenger cars, adapted to heavy industrial use.

Exclusive! A rugged, over-capacity, yet compact drive. Fully enclosed against dirt and other sources of wear. 4-pinion drop-forged differential with "floating" axles take road shock in stride.

Exclusive! A cool-running, 6-cylinder industrial engine that gives full floating power at all times. All-weather waterproof ignition. 4-point stress-free, rubber cushioned mounting kills vibration wear.

Only YALE gas trucks give you these 3 money-saving features that keep trucks on the job

LICK "down-time" and you knock out the big cost factor in gas truck operation. You keep your production rolling steadily at peak levels—while your truck operating costs stay at rock bottom.

YALE, and only YALE, fork-lift gas trucks can give you this big plus—extra strength, extra power, extra precision-geared smoothness throughout the "power line" from engine to differential. While other trucks are "down for repairs" this one *keeps on working* in close quarters, on long hauls, indoors or out.

That's why YALE 3-powered economy means *more work done every day* plus *more days on the job!* Find out about this money-saving truck *now!*

Yale is a registered trademark

—MAIL THIS COUPON TODAY!—

The Yale & Towne Manufacturing Co. Dept. 3612
Philadelphia, Pa.

Please send me detailed information about YALE GAS TRUCKS

Name _____

Company _____

Street _____

City _____ State _____

In Canada write The Yale & Towne Mfg. Co., St. Catharines, Ontario

YALE & TOWNE

YALE GAS AND ELECTRIC INDUSTRIAL TRUCKS • YALE WORKSAVERS
YALE HAND TRUCKS • YALE HAND AND ELECTRIC HOISTS

BREVITY—Identify by IEN - 12248 If you write the maker

Rolling Steel Doors

Manually • Mechanically • Power Operated

No other type of door offers as many desirable features as a good Rolling Steel Door . . . open or closed, they occupy no usable space inside or outside the opening. All-metal construction assures permanence and a lifetime of continuous trouble-free service. Push-button controlled vertical roll up action provides the quick, timesaving door operation demanded today by all industrial and commercial concerns. When you buy Mahon Rolling Steel Doors you get the latest developments in doors of this type — comparison will convince you. See Sweet's File for complete information, or write for Catalog No. G-52.

THE R. C. MAHON COMPANY
Detroit 34, Michigan • Representatives in All Principal Cities

MAHON

BREVITY—Identify by IEN - 12249 If you write the maker

The FIRST monorail

Development of the unique single track railroad car, balanced by gyroscopes, was started by the Englishman Louis Brennan in 1896. Never in wide use, it nonetheless led to many further applications based upon the principles thus developed.

JERVIS B. WEBB CO. was the FIRST to develop TOWVEYOR SYSTEMS

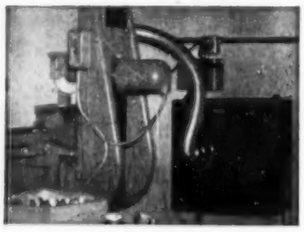
under-floor type towing conveyors

This continuous chain conveyor runs in a steel slot below the floor. There is nothing to obstruct. A simple towing pin device is attached to any standard 4-wheel truck or trailer, 2-wheel truck with dolly, and operator either engages or disengages by lowering or raising the pin. When the pin is dropped into the slot, the trolley attached to the Webb Drop Forged Riveless Chain picks up the load automatically. This original Webb development—the Towveyor—offers great speed and efficiency for handling boxes, packages, barrels, tote boxes, parts, etc. Loading and unloading can be done at any point. The Towveyor System is flexible—trucks may be added, disengaged or side tracked, as desired.

CONVEYOR ENGINEERS AND MANUFACTURERS
JERVIS B. WEBB COMPANY
8115 ALPINE AVE. DETROIT 4, MICH.
OFFICES IN PRINCIPAL CITIES

BREVITY—Identify by IEN - 12250 If you write the maker

STOP DUSTS



Instantly *with* DUSTKOP

Available from stock of 22 standard models
300 cfm to 10,000 cfm

for: Surface Grinders, Tool and Cutter Grinders; Polishers and Buffers; Abrasive Belts and Discs; Woodworking and Plastic Industry Equipment . . . DUSTKOPS collect almost all kinds of industrial dusts.

Ask for Catalog 605-2. Describes dust problem for recommendation by return mail — no obligation.

AGET-DETROIT CO.
401 Main Street Ann Arbor, Michigan

BREVITY—Identify by IEN - 12251 If you write the maker

PUMP . . Tank mounted centrifugal circulates coolant at 30 gal. per min.

Source: SHELLBACK MFG. CO.
1318-22 E. Elsa, Hazel Park, Mich.

For one or more machines

Model 10-10 is a new assembly of vertical motor-driven centrifugal pump and tank to circulate coolant through a hose line to serve one or more machine spindles. The motor rates ¼ hp. on 110-volt 60-cycle ac. and operates at 1,725 rpm. It is controlled at a built-in switch. The pump is assembled in an aluminum housing with a 1-in. threaded outlet.

The tank measures 26 by 10 by 10 in. and is equipped with a baffle and a chip screen. The ⅜-in. hose measures 6 ft. in length. It is supplied with a shut-off cock and a flexible nozzle. Rated capacity of 30 gpm. is at a 4-ft. head.

BREVITY—Identify by IEN - 12252 If you write the maker

CONTRACT WORK . . Solder assembly of carbon and metal for specified uses

Source: STACKPOLE CARBON CO.
1942 Tannery St., St. Marys, Pa.

Particularly for small work

The company has developed a new method by which it is able to solder carbon contacts directly to metal arms, carbon brushes to bronze or beryllium-copper leaf springs, carbon friction discs to metal backing plates for manufacture of products such as contacts, small brushes, friction devices. The method eliminates need for costly fixtures. The company can provide quick action.

BREVITY—Identify by IEN - 12253 If you write the maker

PROTECTING . . Plastic coated glove is flexible to handle small objects

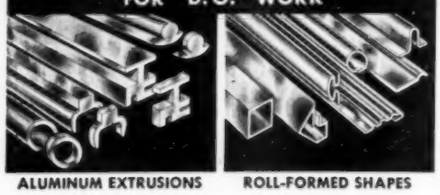
Source: MILBURN CO.
3244-48 E. Woodbridge St., Detroit 7, Mich.

Jersey fabric is coated with plastic in manufacture of this new work glove to provide a combination of protection for a laboratory worker and flexibility that will permit him to handle small objects without difficulty. The glove can be specified as completely coated or palm coated only. It can be laundered. It is known as Model No. 2114 in the company's Plyglov line.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 12254 If you write the maker

PROMPT DELIVERY!
FOR "D.O." WORK



ALUMINUM EXTRUSIONS ROLL-FORMED SHAPES

Let Werner light metal shapes help you meet "D.O." deadlines.

You can get prompt delivery of "custom" shapes in extruded aluminum, as well as roll-formed aluminum, stainless steel, brass, zinc and copper. Shapes are manufactured to close tolerances, to your exact specifications. Quality is assured by Werner's extensive manufacturing and engineering experience, plus full production facilities, including tool-and-die-making equipment.

For an estimate, send drawing and specifications, plus data on quantity, finish, length, etc. Werner can perform the following secondary operations—bending, drilling, punching, cutting, counter sinking and welding. Finishes—as extruded, polished or anodized.

FREE bulletins describing manufacturing facilities and telling when to choose extruded or rolled shapes. Write: Dept. IEN.

R. D. WERNER CO., Inc.
295 FIFTH AVE., N. Y. 16, N. Y. • PHONE MU 6-2595
MANUFACTURERS OF ALUMINUM EXTRUSIONS AND ROLL-FORMED SHAPES

BREVITY—Identify by IEN - 12255 If you write the maker

when the welder must wear a Hard Hat ... give him a

CESCO *Dual Protector*

FOR Arc Welding

• Consists of choice of CESCO Helmets and Fiberglas Hat. Rustproof, adjustable, easy-tilt mechanism holds shield in any position. Spring clip connectors permit *fast, easy detachment* of shield from hat which can be worn separately.

FOR Gas Welding

• A combination of Model 542 CESCO *Speed-Shift* Goggles and Fiberglas Hat. Ball-and-socket mechanism for quick flipping of goggles onto hat or into position. Goggles can be flipped to top of hat when wearer does other work.

NEW CESCO DUAL SKULL AND EYE PROTECTORS

FIBERGLAS HAT with CESCO Helmet or No. 542 Goggles. Completely adjustable units. Hat is light and cool . . . safer than stainless steel . . . waterproof. Can be worn separately. ***Write** us for literature today.*

CHICAGO EYE SHIELD CO. • 7326 Warren Blvd., Chicago 12, Ill.

CESCO FOR SAFETY

OFFICES IN: Atlanta, Birmingham, Boston, Buffalo, Cincinnati, Cleveland, Columbus, Detroit, East Orange, Houston, Los Angeles, Montreal, Philadelphia, Pittsburgh, Seattle, St. Louis, St. Paul, Toledo, Tulsa

BREVITY—Identify by IEN - 12256 If you write the maker

"Ro-Fin" Tubes

For Efficient heat transfer

Nearly 100 sizes of ROME EXTENDED SURFACE HELICAL FIN TUBING are in production . . . straight lengths . . . coils . . . U-bends . . . with or without threaded end connection, or for standard flare connections! Nearly all nationally known manufacturers specify "Ro-Fin"!

For Refrigeration Condensers • Steam Condensers
Fluid Recovery Condensers • Fan-Type Unit Heaters
Concealed Radiation Convectors • Diesel Engine Cooling

Write for Information on All Heat Transfer Problems!

ROME
TURNEY RADIATOR COMPANY
200 East Front Street Rome, New York

BREVITY—Identify by IEN - 12257 If you write the maker

NEW...

Extremely sensitive
PRESSURE & VACUUM
Switches

TYPE SB

The new Type SB pressure and vacuum switches are for use in applications in which close on-off differentials and absolutely consistent maintenance of cut-in and cut-out Settings are essential in the control of pressure or vacuum. Available are two pressure models and two vacuum models. The Pressure Switches have adjustable ranges from 0-15 psi and adjustable on-off differential from .1" wc-10" wc. They may be furnished as calibrated, micrometer type or uncalibrated for screw driver adjustment.

Electrical ratings at 125/250 V AC between 1200 watts and pilot duty depending on differential. The Vacuum Switches offer adjustable ranges from 30"-0" hg vac with adjustable on-off differential from .1" wc-10" wc. Furnished as calibrated micrometer type or uncalibrated with screw driver adjustment. Electrical ratings of both models 1200 watts at 125/250 V AC.

UNITED ELECTRIC CONTROLS COMPANY
80 School Street
Watertown, Mass.

Special models available for requirements not included in the specifications above.

Write for new bulletin 4926 P giving complete details today.

STANDARD & SPECIAL THERMOSTATS & PRESSURE SWITCHES

BREVITY—Identify by IEN - 12258 If you write the maker

KUSHION-TORK
WHAT IT WILL DO FOR YOU

The Cushion Torque of Kanti-Lever Couplings absorbs the hammer blows of sudden or reversing loads and dampens the torsional and radial vibration that cause wear, fatigue and sometimes failure of Motors, Speed Reducers, Ball Bearings and productive machinery. No other coupling is like the Kanti-Lever: It has a circular series of laminated Cantilevers of 200,000 lb. steel, operating in slots, the tapered sides of which automatically stiffen the Cantilevers under increased overloads. Special end-play up to four inches is possible without end thrust. The outer periphery of the Kanti-Lever is available as a brake drum for quick-stopping or reversing machinery. Send for Bulletin No. 28-N.

Kanti-Lever Couplings

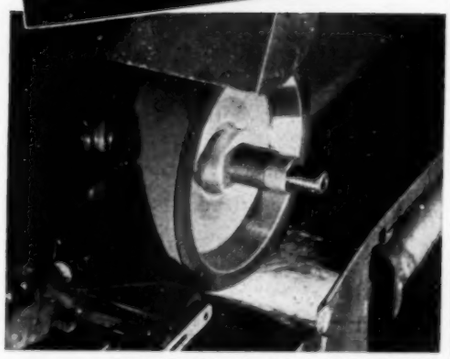
4,000,000 h. p. in Use

MFRS. OF SECTIONAL STOCK RACKS

BROWN ENGINEERING CO.
122 NORTH 3RD ST. READING, PENNA.

BREVITY—Identify by IEN - 12259 If you write the maker

Better rubber products are made with Du Pont NEOPRENE



Courtesy: The Carborundum Company, Niagara Falls, N.Y.

New contact wheel with neoprene cover resists abrasion, grease, oil . . . lengthens belt life

For abrasive belt applications, the serrated neoprene surface on this new type of contact wheel means longer belt life, faster stock removal, and more uniform finishing. The flexing action of the resilient neoprene face constantly varies the grinding angle of the abrasive particles . . . thus, reduces "glazing," enemy of long and productive belt service.

Neoprene's abrasion-resistance permits this unique contact wheel to withstand the terrific punishment it must take in this type of service. Neoprene's oil and grease-resistant properties assure long wheel life, too, despite almost constant contact with oil coolants and high-melting grease used in grinding and polishing operations.

Like this new-type contact wheel, thousands of parts and products used in industry today depend on neoprene for long, dependable service under rugged conditions. While Du Pont makes no finished products of neoprene, your rubber goods manufacturer or distributor will gladly tell you about the neoprene products he supplies. It will pay you to investigate neoprene's advantages in the rubber products you use.

FREE! THE NEOPRENE NOTEBOOK

Full of interesting stories. New, unusual applications of neoprene to build new products . . . improve old products . . . reduce maintenance costs. Write today for your free subscription. E. I. du Pont de Nemours & Co. (Inc.), Rubber Chemicals Division D-12, Wilmington 98, Delaware.

NEOPRENE
The rubber made by Du Pont since 1932

DU PONT
BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

BREVITY—Identify by IEN - 12261 If you write the maker

SNOW PLOW . . Engine driven, gathers and throws snow to one side

Source: DAHLMAN EQUIPMENT SALES CO.
502 N. Prior Ave., St. Paul 4, Minn.

Snow plowing mechanized

Illustrated is the company's new Snow-Jet engine-driven plow designed to clear a path through loose or packed snow to 30 in. in width. Overall dimensions are 84 in. in length by 21 in. in height for the machine and 6 ft. for the delivery spout. Weight is about 525 pounds.

Drive is by a 7.7-hp. air-cooled gasoline engine with chain and belt connection to ball-bearing gathering spirals, a centrifugal blower and the traction track-type tread. The V-belt connecting to the tread prevents damage to the machine in the event of striking a solid obstruction. The operator walks behind the machine where he guides it and manipulates the controls.

Also available is a new attachment plow of the same general design to mount on the front of a truck or tractor to clear a 6-ft. path. This plow employs the tractor for forward movement and its own auxiliary engine, rating 25 hp. or more, to drive the gathering blades and the blower.

BREVITY—Identify by IEN - 12262 If you write the maker

WELDING . . Gas shielded arc torch and drive to feed metal filler wire

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.

It's easy to operate

Fillerweld is a new combination of gas-shielded arc torch employing a tungsten electrode with a Thy-mo-trol wire drive that takes filler wire from a reel and feeds it through the torch into the arc. Feed is controlled by depressing or releasing a trigger on the torch. The new equipment applies to best advantage on stock less than $\frac{1}{16}$ in. in thickness.

Application is with the company's Type-WP Inert-Arc welding transformer for use on aluminum, beryllium copper or magnesium. It applies with a Type WD-4150 or WD-4200 power unit to weld stainless steel, copper, Inconel, mild steel and other weldable alloys. Either argon or helium can be used as the inert gas.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 88

BREVITY—Identify by IEN - 12263 If you write the maker

Make Your Glove Dollars Increase Production

PIONEER

Stanzoils®

PIONEER's new Stanzoil catalog shows you how to buy the right glove for each job at the lowest per hour cost. Price buying alone is false economy — no *one* glove is suitable for *all* uses. It pays to buy for utmost protection from injury *plus* hand and finger dexterity that mean faster work. New Stanzoil catalog gives you an easy method of efficient selection. *Pioneer recommendations are unbiased — we make all kinds of liquid-tight gloves,* all-neoprene, neoprene or plastic coated, 32 styles, weights, sizes, colors. Pleased workers and no work stoppages are vital these days — write today for this helpful catalog.

R-17 Extra-Duty Pioneer Stanzoil, red neoprene coated fabric, non-slip grip, curved fingers, pro-flex palm and inserted thumb design.

Industrial Glove Division

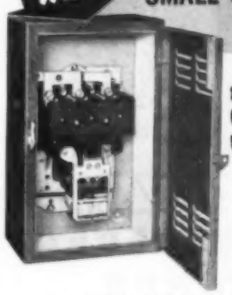
The PIONEER Rubber Company
638 Tiffin Road • Willard, Ohio

STANZOIL

OVER *30 Years* OF QUALITY GLOVE MAKING

BREVITY—Identify by IEN - 12264 If you write the maker

SAVE 3 WAYS with this 50 AMPERE CONTACTOR for SMALL SPOT WELDERS



- ✔ Low Cost
- ✔ Smaller Size
- ✔ Low Maintenance

● Specify this new, low cost CLASS 8990 TYPE D MAGNETIC WELDER CONTACTOR to handle transformer primaries of spot welders rated approximately 10 KVA, 220 volts; 20 KVA, 440 volts and less.

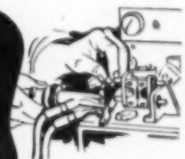
Simple vertical action, short stroke, hardened parts, and complete accessibility contribute to long life with low maintenance cost.

Write for Bulletin 8990. Square D Company, 4041 N. Richards St., Milwaukee 12, Wisconsin

SQUARE D COMPANY
DETROIT • MILWAUKEE • LOS ANGELES

BREVITY—Identify by IEN - 12265 If you write the maker

IDEAL Thermo-Grip® Does Soldering Jobs Better!



Thermo-Grip with "Plier" attachment speeds up soldering lugs to cables.

FASTER!

Resistance heating provides instant heat for fast production soldering.

EASIER!

One hand always free to handle solder. Concentrates heat. Does jobs no other tool can handle.

CHEAPER!

Time savings up to 30%— no waste — no cold flow joints—no re-makes.

NEW LOW-COST MODEL

"Standard" 1000-Watt Model with "Plier," "Pencil" and "Fork" attachments also available.

Sold Through America's Leading Distributors

TEST IT FREE!

IDEAL INDUSTRIES, Inc.
1108 Park Ave., Sycamore, Ill.

Please arrange FREE Thermo-Grip Demonstration and send catalog data.

NAME _____
COMPANY _____
ADDRESS _____
CITY _____ ZONE ____ STATE _____

BREVITY—Identify by IEN - 12266 If you write the maker

FOR "ROUND-THE-CLOCK" CIRCUIT SECURITY

OKOLITE-OKOPRENE CONTROL CABLES

Control cables are called on to operate under any kind of service condition: horizontal or vertical, indoors or out, above or underground; in wet, dry, hot or cold locations; exposed to oils, acids, chemicals or any kind of weather.

Okolite-Okoprene cables fulfill every requirement for control cable. Okolite Insulation and Okoprene Sheath combine the highest dielectric strength with the most impervious protective covering. Result: an unequalled soundness both electrically and physically.

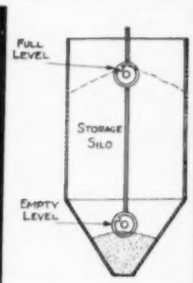
If your expanding electrical plans call for additional control circuits, get *all* the information on "round-the-clock" circuit security from Okonite's Bulletin IE-1056. The Okonite Company, Passaic, N. J.

THE BEST CABLE IS YOUR BEST POLICY

OKONITE *insulated wires and cables*

BREVITY—Identify by IEN - 12267 If you write the maker

No Spillage
No Shortage
of Materials
in
Bins, Hoppers,
etc.
with



SYNTRON
HOPPER LEVEL SWITCHES

—automatically maintaining constant full and empty levels of materials—from fine to coarse—in bins and hoppers.

They will start and stop feeders filling hoppers—or ring alarm bells—or turn on lights—from material pressure, or the lack of it.

Write for catalog data

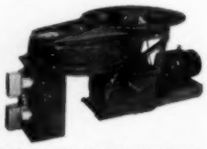
SYNTRON CO.
410 Lexington Ave. Homer City, Pa.

BREVITY—Identify by IEN - 12268 If you write the maker

PERHAPS ONE OF THESE

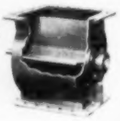
will give you an idea. Of course, we can't show everything Jeffrey builds to help you to greater production at less cost . . . but here are four items you might have overlooked in thinking of Jeffrey and its broad line.

Any one of the four has its own specific application . . . is able to function satisfactorily in its own right. Car Pullers, Bin Valves, Barrel Packers or Feeders . . . we will be glad to tell you more about them . . . how they might help speed up your operations.



ROTARY BIN CHECK VALVE for a constant, uninterrupted flow of fine flooding material to vibrating Feeders or WAYTROLS. Also Bin Level Indicators.

In the meantime, send for our New Catalog No. 830.



LOW-HEAD BARREL PACKER for reducing size of containers, increasing capacity and cutting shipping costs. Also supplied with deck to provide conveying action in packing.

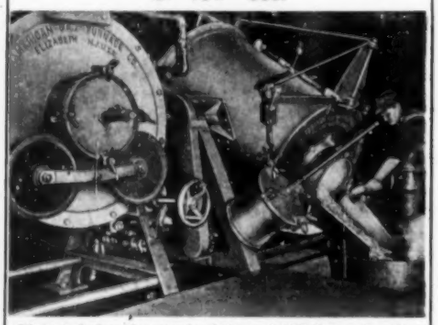
ROTARY-TYPE FEEDER for finely pulverized material. Also other types of feeders.

CAR PULLER for spotting from one to six cars—two sizes. There is a new bulletin on the Jeffrey Car Puller—send for it.

JEFFREY
ESTABLISHED 1877
THE JEFFREY MANUFACTURING CO.
914 Fourth St., Columbus 16, Ohio

BREVITY—Identify by IEN - 12269 If you write the maker

ROTARY GAS CARBURIZERS
. . . provide high production at low cost



Illustrated above is part of a battery of AGF Rotary Gas Carburizers. A wide variety of work can be carburized in the same furnace in independent charges. The time, temperature, etc., is fixed in each case, according to the case depth required, the kind of steel and the nature of the parts.

Write for complete information and prices.

AMERICAN GAS FURNACE CO.
974 LAFAYETTE STREET, ELIZABETH 4, N. J.

BREVITY—Identify by IEN - 12270 If you write the maker

TESTING . . Electronic machine physically tests non-metallic materials

Source: INSTRON ENGINEERING CORP. 4 Hancock St., Quincy 71, Mass.

Now also compression

New accessories have been added to the Model TT-B testing machine, previously described IEN-13052-48, and overall test range is new from 2 grams to 5,000 pounds. A selection of jaw speeds is available from 0.02 to 20 in. per minute. As in the original design, the machine performs load-elongation tests on materials such as textile fibres, yarns, fabrics, plastic film, laminates, rubber, paper, rope, leather, adhesives. It employs electronic means to detect and record the applied load. Its pulling jaw is driven to provide control rate of elongation. Maximum jaw travel is 40 inches.

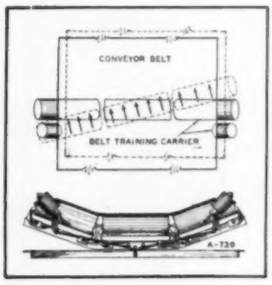
Accessories for compression tests include an auxiliary removable cross head which is attached to the frame below the moving cross head. Compression-type load cells with rigidly attached load-sensitive tables are provided so the sample is compressed between table and cross head.

An integrator has been developed to make counter readings that will show the area under the load deformation curve equivalent to the energy either absorbed or returned by the test sample. The machine operates on 110-volt 60-cycle ac. Dimensions are about 56 by 19 by 76 inches.

BREVITY—Identify by IEN - 12271 If you write the maker

CONVEYING . . Training carrier keeps conveyor belt in alignment

Source: STEPHENS-ADAMSON MFG. CO. 231 Ridgeway, Aurora, Ill.



No wear on belt edges

New three roll carrier is pivoted at its center to swing in a horizontal plane to an angle, one way or the other, with its mounting base. At the ends are two additional rolls assembled on pivots connected by rods to the base. These rolls clear the belt on the two sides as long as it remains in the center. When it trends to one side or the other it rides the roll on that side, operates the pivot to turn the carrier at an angle with the direction of travel. In this position, the carrier urges the belt back to center again. Then it returns to its normal square position.

Spacing is at 50 or 100-ft. intervals along a conveyor run. The assembly is available with a training carrier for the return run also for each of the company's designs of belt-conveyor carriers as shown in 20-page bulletin 2-C No. 1150.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 12272 If you write the maker

WHAT A LOT OF QUESTIONS

THIS TAG CAN ANSWER

★ PROPERTY RECORD SERIAL NUMBER
★ DEPARTMENT NUMBER OR CODE
★ YOUR COMPANY NAME OR INITIALS
★ CODE FOR SUPPLIER'S NAME
★ DATE YOU MADE PURCHASE

This year, simply fasten a Matthews Inventory Tag to each item of capitalized equipment in your offices and factories. These inexpensive metal or fibre tags can be furnished in plenty of time for your year-end equipment inventory.

Write today for complete information.

JAS. H. MATTHEWS & CO.
3948 FORBES ST. • PITTSBURGH 13, PA.
NEW YORK • BOSTON • PHILADELPHIA
CHICAGO • CLIFTON N. J.

BREVITY—Identify by IEN - 12273 If you write the maker

NO SPRINGS TO BREAK in the Nutting JACK
IT'S ALWAYS DEPENDABLE

The Nutting Jack is the ONLY jack operated entirely by gravity and leverage. With no springs to break, there is no danger of your whole jack-skid system suddenly being put out of service.

One lift truck and two dead skids cost about the same as two Nutting Jacks and twelve semi-live skids. That's one reason why the Nutting Jack and Skid system can be such a money-saver in your plant. Material stored on semi-live skids is made mobile in a hurry. The jack may be coupled to one skid, then uncoupled and coupled to another faster than the time it takes to tell about it.

Send for Bulletin 48-JS

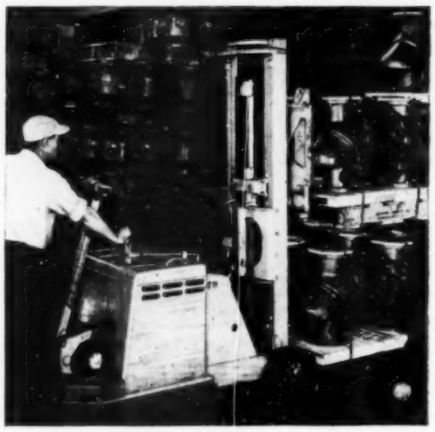
Look in your classified phone directory for your Nutting representative, or write for Bulletin 48-JS. It will pay you to get all the facts on this superior Nutting Jack-Skid handling system.

Nutting makes everything in floor trucks, wheel, casters.

NUTTING TRUCK AND CASTER COMPANY
2012 Division Street Faribault, Minnesota

BREVITY—Identify by IEN - 12274 If you write the maker

NOW GRINNELL
moves valves four times faster



with STANLEY
Steel Strapping

At its Cranston, R. I. plant, Grinnell Co., Inc. found that by strapping four valves to a skid with Stanley Steel Strapping, truckers could handle four valves in the same time that it formerly took to handle one.

Trucks that previously carried valves one-at-a-time now carried four valves — *three riding free*. And in addition, Grinnell got a better, easier to handle shipping unit. Valves strapped to a skid could be stacked higher — saving critical storage space.

And this is just another typical example of what Stanley Steel Strapping and modern shipping methods can do for hard-to-handle products. See how it can save for you. Write for full information to: The Stanley Works, Steel Strapping Division, 204 Lake Street, New Britain, Conn. Offices in principal cities.

Improved ACE Strapping Tool.
Fast, rugged and easy to operate. Spring feed magazine holds 100 seals. Operates in any position. Three sizes — for ⅜", ½" and ⅝" strapping.

STEEL STRAPPING AND CAR BANDING ACCESSORIES

STANLEY
Reg. U.S. Pat. Off.

HARDWARE • TOOLS • ELECTRIC TOOLS • STEEL STRAPPING • STEEL

BREVITY—Identify by IEN - 12276 If you write the maker

TRADE MARK — REG. U. S. PAT. OFF.

Presenting

a NEW MARK of Long-Established Quality

Since 1878 and the earliest bicycle cyclometer . . . to the present day when counters are built into everything from hay-balers and textile looms to jet planes and gasoline pumps . . . Veeder-Root has been "the name that counts."

Today, Veeder-Root is the world's largest manufacturer of counting and computing devices for mechanical, electrical, and manual operation. And as a symbol of "the name that counts," this trademark has been developed as a hallmark of old-fashioned quality and modern design *in everything that counts.*

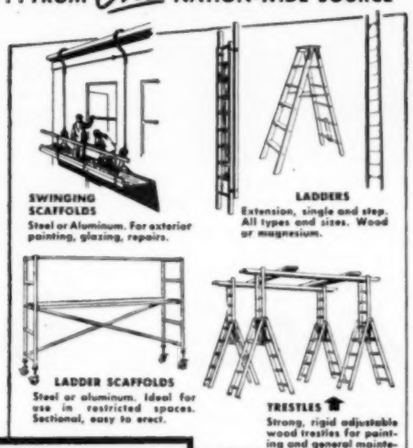
So when you buy counters, look for this mark, and remember: V-R stands for Veeder-Root . . . and also for *"Value Received."*

VEEDER-ROOT INC., Hartford 2, Conn.

BREVITY—Identify by IEN - 12277 If you write the maker

Select the Ladder or Scaffold *Best* for YOUR Job!

. . . FROM *One* NATION-WIDE SOURCE



SWINGING SCAFFOLDS Steel or Aluminum. For exterior painting, glazing, repairs.

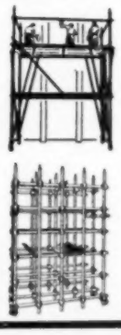
LADDERS Extension, single and step. All types and sizes. Wood or magnesium.

LADDER SCAFFOLDS Steel or aluminum. Ideal for use in restricted spaces. Sectional, easy to erect.

TRESTLES Strong, rigid adjustable wood trestles for painting and general maintenance. Selected stock.

"TUBE LOX" tubular scaffolding (Steel or Aluminum)

Four basic individual parts quickly assembled for work stands, storage racks, rolling scaffolds, interior and exterior scaffolding.



ALUMINUM ROLLING SCAFFOLDS Sectional, frame-type for general maintenance. Sectional steel rolling scaffolds, also available.

● You save time and money and simplify the selection and delivery of top-quality equipment when you specify "Gold Medal" Ladders and Scaffolds. Made of the finest materials by experienced workers — backed by the *oldest* manufacturers of off-the-ground work equipment —quickly available through a nation-wide network of branch offices or distributors.

Write for your free bulletins showing how these and other "Gold Medal" products are used in industrial plants throughout the country.

Ladders and Scaffolds for Any Purpose—Any Place—Any Time

Gold Medal LADDERS SCAFFOLDING — for Greater Safety...Efficiency...Economy

THE PATENT SCAFFOLDING CO., Inc

38-21 12th Street, Dept. IEN — Long Island City 1, N. Y.
West Coast Plant: 6931 Stanford Ave. — Los Angeles, Calif.

BREVITY—Identify by IEN - 12279 If you write the maker

PUMP . . Self-priming centrifugal rates to 800 gpm., heads to 180 feet

Source: INGERSOLL-RAND CO.
11 Broadway, Dept. NR, New York 4, N. Y.

The liquid goes round and round

The impeller in this new self-priming Motorpump discharges through two passages into a chamber with outlet connection at its top. During a priming interval the upper passage discharges a mixture of vapor and liquid into the chamber where the vapor separates from the liquid and passes out through the discharge. The remaining liquid re-enters the impeller through the lower passage to mix with more vapor drawn in from the suction line to be delivered and separated from the liquid in the same manner.

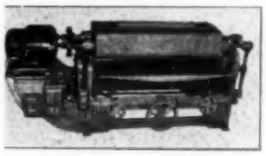
When the suction line is finally filled with liquid and the chamber is also full, flow through the lower passage reverses and both passages act as normal pump discharges. The design operates without recirculation losses so there is no need for valves to cut off recirculation after prime has been obtained. No flap valve is required since the pump casing is proportioned so sufficient liquid is trapped on shut down to insure priming when the pump is restarted.

Sizes range from ¾ to 25 hp. at the motor. Standard design includes cast-iron casing, bronze impeller and standard NEMA motor. Ball-bearing assemblies are also available for drive by a coupled motor, engine or turbine. Dimensions range from about 17¼ by 14⅛ by 8¾ in. to 35¼ by 25⅞ by 17½ inches. Weight ranges from 110 to 625 lb. with the motor.

BREVITY—Identify by IEN - 12280 If you write the maker

SANDING . . Two drum machine for plastic, metal, wood, to 54 inches

Source: BEACH MFG. CO.
51 Mill St., Montrose, Pa.



For precision performance

New No. 9 machine in the company's line of motor-driven sanding equipment mounts two drums, 12 in. in diameter. They carry the abrasive and rotate at 1,200 rpm. each by individual motor drive. Ground-steel rolls, directly under each abrasive drum, support the work to produce uniformly finished surfaces. Feed into the machine and through it is by six power-driven rolls of which the lower rolls can be rubber covered.

The machine takes material from $\frac{1}{16}$ to 6 in. in thickness. It is available in six sizes for work width from 24 to 54 inches. Overall dimensions for the 24-in. machine are 81 by 56 in. and for the 54-in. machine are 111 by 56 inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

BREVITY—Identify by IEN - 12281 If you write the maker

. . . Newest of the Safety Stars!

★ *BREATHING—50% easier!*
★ *FILTER—New "Static-Web"!*
★ *MAINTENANCE—25% less!*
★ *WEIGHT—25% less!*
★ *SIZE—35% smaller!*
★ *AIR FLOW—Counter Gravity!*
★ *U.S. Bureau of Mines Approval #2166 for Dust*

ALL-STAR ON ALL COUNTS!

Meet our newest safety star! Dustfoe #55 weighs less than 3 ounces—brings you all-star comfort, performance, protection! Revolutionary "Static-Web" throw-away filter retains dust electrostatically, needs no pre-filter. Filter is 50% narrower to eliminate "blind spots." There's nothing finer on any count!

Write for Bulletin & Prices

McDonald DUSTFOE #55 RESPIRATOR

B. F. McDONALD CO.
Manufacturers & Distributors of Industrial Safety Equipment
5721 WEST 96TH ST., LOS ANGELES 45, CALIF.
Other Offices in San Francisco & Houston

BREVITY—Identify by IEN - 12282 If you write the maker

INDUSTRIAL INKS To Mark Anything!

Production engineers use "Clear Print" Wood Block Stamp Pads and Opaque Inks for the best clear, sharp, fast drying impressions. To cut down on lost shipments and rejected assemblies because of poor identification, use "Clear Print" for shipping room direction stamps and parts numbers. You are assured of permanently legible markings. Many bright visible colors available.

- For marking on non-porous materials such as:
- WOOD, METAL, GLASS, PLASTIC, RUBBER, PAPER AND MANY OTHERS.

BREVITY—Identify by IEN - 12283 If you write the maker

"The cost of changing to FUSETRON dual-element FUSES has been paid for more than ten times over in sustained production time"

. . . says Mr. John H. Van Houten,
Superintendent
Paul Lime Plant, Paul Spur, Arizona

HERE'S HOW

"Prior to February, 1948 we used ordinary renewable fuses throughout our plant. They gave us short-circuit protection but we lost a great many motors due to single phasing, excessive heating and climatic conditions.

"When a motor goes out in a plant like ours, it costs us a loss in production that is difficult to make up.

"In February, 1948 we changed the whole plant over to FUSETRON fuses. On the motors we installed a size to give motor running protection.

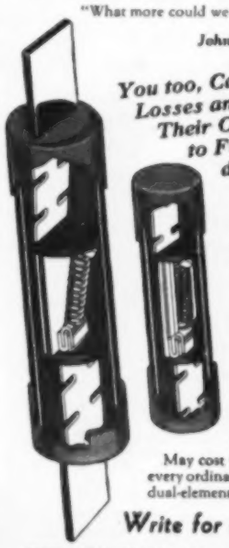
"We have completely eliminated motor losses due to single phasing and believe we have better all-around protection than before.

"Our records show that the cost of changing to FUSETRON fuses has been paid for more than ten times over in sustained production time.

"What more could we ask?"

John H. Van Houten

You too, Can Cut Production Losses and Save Many Times Their Cost by Changing to FUSETRON dual-element FUSES



FUSETRON
TRUSTWORTHY NAMES IN ELECTRICAL PROTECTION
BUSS

DON'T RISK LOSSES!

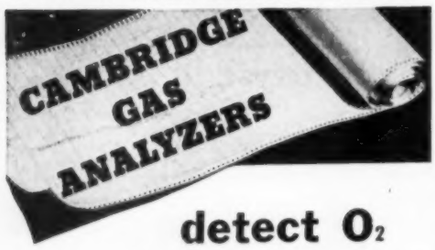
One lost motor . . .
One needless shut down . . .
One destroyed switch or panel
One burned out solenoid . . .

May cost you far more than replacing every ordinary fuse with a FUSETRON dual-element fuse.

Write for complete facts.

BUSSMANN MFG. CO., University at Jefferson, St. Louis 7, Mo.
(Division of McGraw Electric Co.)

BREVITY—Identify by IEN - 12285 If you write the maker



detect O_2 in feed water

Continuous records of the oxygen dissolved in boiler feed water and of the hydrogen entrained in steam, indicate when corrective measures are necessary to prevent otherwise unsuspected and costly corrosion. Cambridge Analyzers measure and record dissolved oxygen directly. The hydrogen in the steam is measured and indicates the quantity of oxygen set free by dissociation. Cambridge Instruments are available for continuously recording either O_2 or H_2 separately, or O_2 and H_2 simultaneously.

Send for Bulletin 148 B. P.

CAMBRIDGE INSTRUMENT CO., INC.
3710 Grand Central Terminal, New York 17, N. Y.
PIONEER MANUFACTURERS OF PRECISION INSTRUMENTS

BREVITY—Identify by IEN - 12286 If you write the maker

FOR THE FINISHING TOUCH

You can't beat this new 6-72 Vonnegut Abrasive Belt Grinding and Polishing Machine for cutting weld seams and burrs, removing finish blemishes, etc. Light—but rugged . . . and well balanced . . . easily manipulated when arranged as a *swing machine*. It also can be supplied as a *floor stand* or as a *lathe attachment*. Because of its great versatility, the machine has proved its value for "special" applications too— and it may suggest an entirely new application in *your* plant. If so, write us about it—we'll be glad to help you solve the problem and supply the details for efficient production. Send for Bulletin No. 62.

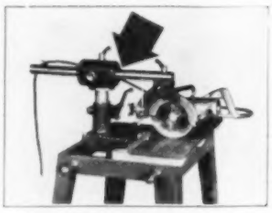
VONNEGUT MOULDER CORPORATION
1827 MADISON AVENUE • INDIANAPOLIS 25, INDIANA

BREVITY—Identify by IEN - 12287 If you write the maker

BREVITY—Identify by IEN - 12288 If you write the maker

SAWING . . Radial arm and column takes motor driven circular saw

Source: CONSOLIDATED MACHINERY & SUPPLY CO. 2029-33 Santa Fe Ave., Los Angeles 21, Calif.



You supply the saw

Comet Radial Arm is a new assembly of a vertically-adjustable column to mount a standard portable electric circular saw on a suitable stand to act as a radial sawing machine. The arm provides cut-off movement of 24 in., bevel range of 45 deg., mitre range of 45 deg. right or left. Vertical adjustment is 9¾ inches. List price with the column is $160. The company is prepared also to supply a saw-mounting bracket and pressed steel legs to complete the machine.

BREVITY—Identify by IEN - 12289 If you write the maker

PAINTING . . Priming liquid for use on old and new metal surfaces

Source: PRUFCOAT LABORATORIES INC. 61-65 Main St., Cambridge 42, Mass.

No particular surface preparation

Type P-50 metal primer is a new heavy-bodied oil-modified resin vehicle with a high percentage of inhibitive pigment, principally zinc chromate. Application is by brush or spray to deposit a relatively heavy film to level out rough surfaces and protect at sharp edges and projections. Coverage on smooth metal surface is about 400 sq. ft. per gallon. The film dries overnight.

The primer is suited for spot use on old work and as a complete overall prime coat on either old or new surfaces. It is particularly suited as a shop prime coat on structural steel and equipment for new construction work on which a single protective coat is specified.

BREVITY—Identify by IEN - 12290 If you write the maker

TESTING . . Radiation probe detects and measures radioactivity

Source: GENERAL ELECTRIC CO. Dept. 6X-201, Schenectady 5, N. Y.

For laboratories, hospitals

Alpha, beta, gamma and neutron radiation can be detected and measured with this new probe. It applies in monitoring contamination of clothing, personnel, laboratory equipment. The assembly includes a phosphor, photomultiplier tube and a two-stage amplifier. Light flashes produced when nuclear particles strike the phosphor are converted into electrical impulses that can be counted. Interchangeable detecting heads apply for the various types of radiation. Overall dimensions are 2⅝ by 15 inches. Weight of the new assembly is about 10 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 12291 If you write the maker

BREVITY—Identify by IEN - 12292 If you write the maker

BREVITY—Identify by IEN - 12293 If you write the maker

Now! MEASURE DISTANCE -AS EASY AS WALKING- with Rolatape

FREE 10-DAY TRIAL!

- cuts estimating, layout time 90%
- measures line to line, or wall to wall
- gives quick check on completed work
- measures curves and contours easily
- used in safety engineering, time study
- no second man needed

You will be amazed at how much time ROLATAPE can save you. As one superintendent put it, "ROLATAPE saves one man-day *every* day."

Ask your supply house for ROLATAPE – or write us. We will send Model 200 on a *FREE 10 DAY TRIAL BASIS!* You will find this quality measuring instrument will repay its cost of $27.50 *many times over*. Once you use ROLATAPE you'll never be without it!

Rolatape Inc. MODEL 200

Records to 100 feet, rings bell, Repeats cycle. Wt. 2½ pounds. Built to give years of hard service. Comes in top grain cowhide case.

Dept. BA, P. O. Box 1100, Santa Monica, Calif.
Manufacturers of a complete line of wheel-type measuring instruments.

BREVITY—Identify by IEN - 12294 If you write the maker

For SALES and SERVICE on VIKING ROTARY PUMPS
Call Your Nearest
VIKING REPRESENTATIVE

The Viking Pump Company is represented by a nation-wide sales and service organization in key cities from coast to coast . . . from Canada to the Gulf. Is your pump installation operating at top efficiency? Do you have a pump maintenance problem? Do you have a new pumping application? Write or call the Viking representative nearest your plant for service.

ATLANTA
J. W. DORNING
668 Upton Road N.W.
Phone Vernon 9663

CHICAGO 4
C. R. DENNIS
549 W. Washington Blvd.
Phone Franklin 2-8818

CLEVELAND 13
J. A. CONDEY
710 Marshall Bldg.
Phone Cherry 1-0087

DALLAS
C. R. PHILLIPS
1171 N. Prospect St.
Phone Dallas 1-1

INDIANAPOLIS 25
C. D. SADLER
407 Madison Avenue
Phone Plain 8169

KANSAS CITY 8
F. J. FINNEY
1027 Grand Avenue
Phone Harrison 8021

LOS ANGELES 58
E. E. BURTON
4402 Long Beach Avenue
Phone Adams 19611

MILWAUKEE 3
C. F. MULLENS
410 West Michigan St.
Phone Daly 8-0807

NEW YORK 18
HERB FURBER
614 W. 46th St.
Phone Longacre 3-2616

AMARILLO, TEXAS
WILLBURN BROS.
311 N. Fillmore Street

BALTIMORE 1
W. J. FRIDDLE
Charles & Lombard Sts.

BIRMINGHAM 5
FI MF EQUIP. INC.
1011 7th Ave. So.

BOISE
ALLEN MFG. CO.
400 Warm Springs Ave.

BOSTON 10
HAYES PUMP & MACH. CO.
120 Purchase St.

BUFFALO 16
HUGH NEAL CO.
84 Peabody Street

CHARLOTTE 10, N. C.
SOUTHERN PUMP & TANK COMPANY
1720 N. Tryon St.

CINCINNATI 2
W. L. JOHNSTON
218 Vine Street

DECATUR, ILL.
VAN DYKE EQUIP. & MFG.
Rt. 48, ½ Mile East Rt. 51

DENVER 16
EATON METAL PROD. CO.
4900 York Street
Also Albuquerque, Casper, Billings and Omaha

DENVER 17
HENDRIE-BOLTHOFF CO.
1050 17th Street

DETROIT 26
KERR MACH. CO.
Kerr Building

EL PASO, TEXAS
G. S. THOMSON
611 N. Campbell St.
Also Phoenix, Arizona

EVANSVILLE 8, IND.
SHOUSE DRILL
222 Court Bldg.

HOBBS, NEW MEXICO
T. MOON SUP. CO.
Also Artesia, New Mexico

HOUSTON 1
SOUTHERN ENGINE & PUMP COMPANY
900-910 N. Charles Street
Branches: Dallas, San Antonio, Edinburg and Kingsville

LOUISVILLE 2
NATH LA VIELLE
540 W. Main Street

MEMPHIS 2
J. L. DILWORTH
330 South 3rd Street

MINNEAPOLIS 14
LEON GARDNER
3524 University Ave. S. E.

NEW ORLEANS 12
MENGE PUMP
549 Dryades Street

ODESSA, TEXAS
W. L. SCHWEE CO., INC.
P. O. Box 1026

PHILADELPHIA 10
W. H. KAGAN
3330-38 Fairmount Avenue

PITTSBURGH 22
DUMER EQUIP.
Oliver Building

RICHMOND
O'NEILL PUMP
601 E. Franklin St.

SALT LAKE CITY 1
UTILITY ENG., INC.
630 Dooly Bldg.

SAN FRANCISCO 5
DELAVAL PACIFIC
61 Beale Street
Also Seattle and Portland

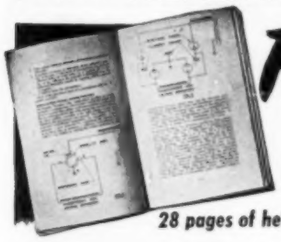
ST. LOUIS 1
LANE MACH. CO.
7th & Market Street

TULSA 5
CRAIG WHEATLEY CO.
614 So. Detroit Ave.

VIKING AN HONORED NAME IN PUMPING

Viking Pump Company Cedar Falls, Iowa
See Our Catalog in SWEETS

BREVITY—Identify by IEN - 12295 If you write the maker



Free!

FROM WESTERN PRECIPITATION

28 pages of helpful facts about

COTTRELL ELECTRICAL PRECIPITATORS

THIS HELPFUL 28 PAGE BOOKLET — Prepared by Western Precipitation Corporation, *pioneers in the commercial application of* COTTRELL *Precipitators*—summarizes and illustrates many of the basic facts you should know about COTTRELL Precipitators for use in recovering industrial dusts, mists, fogs, fumes, fly ash and other suspensions from gases. Written particularly to answer questions of design engineers, plant engineers and others interested in COTTRELL Precipitators, this booklet outlines the various types available, how they operate, principal types of electrical systems and rectifiers, shell construction, other helpful data.

As long as the supply lasts, a free copy will be sent on request to our nearest office. Write for Bulletin No. C103 today!

WESTERN Precipitation CORPORATION

DESIGNERS, ENGINEERS & MANUFACTURERS OF EQUIPMENT FOR COLLECTION OF SUSPENDED MATERIALS FROM GASES & LIQUIDS

Main Offices: 1011 WEST NINTH STREET, LOS ANGELES 13, CALIFORNIA
CHRYSLER BLDG., NEW YORK 17 • 1 LaSALLE ST. BLDG., 1 N. La SALLE ST., CHICAGO 2 • NOBART BUILDING, SAN FRANCISCO 4, CALIFORNIA
PRECIPITATION CO. OF CANADA, LTD., DOMINION SQ. BLDG., MONTREAL

BREVITY—Identify by IEN - 12296 If you write the maker

NO Lubricant Cost

NO Lubrication Labor

TRANSALL Heavy duty Idlers are *Pre*-Lubricated

Because of the permanent lubrication and the rugged construction, TRANSALL Idlers have a greater life expectancy than other makes of idlers. The more severe the service, the greater this advantage.

Why not investigate how we can help you keep operating costs to a minimum?

TRANSALL Idlers will probably slip right into your present installations, since they are dimensionally interchangeable with most leading lines.

Immediate Shipment

TRANSALL INC.

Manufacturers of a complete line of Belt Conveyor Equipment

117 North 11th St. Birmingham 4, Ala.

BREVITY—Identify by IEN - 12297 If you write the maker

Machine de-burring with NOBUR *pays BIG production dividends!*

NOBUR Tools *turn a slow bench operation into fast and efficient machine work!* Remove burrs on multi-walled parts with a smooth, clean cutting action that won't mar highly finished surfaces. Eliminate rejects from slow, costly hand work with files, scrapers and abrasives.

Nobur Tools are used on any lathe, drill press, portable drill or flexible shaft. Operation of the double-edge cutting blade is easy and safe . . . no skilled help is required, and the spindle never needs to be stopped for either de-burring or chamfering.

Nobur Tools cut freely on either hard or soft metals, are simple in construction and are made in sizes to cover a full range of hole diameters. ***NEW "D5" SERIES extends range of NOBUR applications to holes as small as 1/8" diameter. WRITE FOR FULL DETAILS TODAY!**

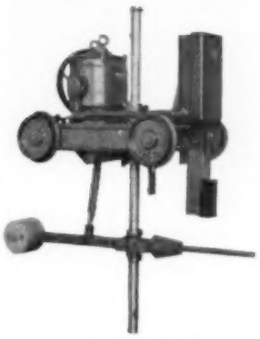
Parts like these quickly de-burred with NO BUR TOOLS

NOBUR MANUFACTURING COMPANY
717 N. VICTORY BLVD., BURBANK, CALIF.

BREVITY—Identify by IEN - 12298 If you write the maker

DRILLING . . Wheel mounted machine reams and countersinks structural work

Source: LAKESIDE BRIDGE & STEEL CO.
5303 N. 33rd St., Milwaukee 9, Wis.



Simple, tough, husky

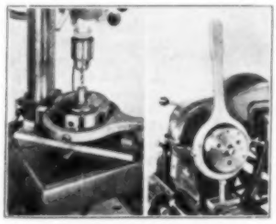
Vertical motor rating 2 hp. and operating at 1,200 and 900 rpm. is gear connected to the spindle of this new machine for drive at 265 and 200 rpm. The spindle carries a No. 4 Morse taper at its nose end. It provides 15 in. of normal vertical movement which can be increased to 26½ in. by the use of available adjustments. The motor with its control and push-button start-stop station is mounted on a wheel-equipped truck with the spindle assembled at about center and a manual feed arm suspended from beneath. The unit is designed to ride a structural boom that can be set up on a building column or on a floor stand in manner similar to a radial drill. An 18-ft. four-wire lead connects to a power source.

In addition to the machine, the company is prepared to supply booms measuring 10 to 20 ft. in length or to provide detail drawings of the boom and of wall brackets with which a user can build his own. The machine has capacity to ream 250 to 350 holes per hr. in structural work. When employed as a drill, capacity is 125 7/8-in. holes per hr. in 5/8-in. mild steel.

BREVITY—Identify by IEN - 12299 If you write the maker

CHUCK . . Universal design, independent adjustable sliding jaws

Source: WALLACE PAWLEY ENTERPRISES
988-92 E. Slauson Ave., Los Angeles 11, Calif.



Lever operates sliding sleeve

New Hampton Chuck mounts three jaws in connection with a lever-operated sliding sleeve that provides radial action of 1/64 inch. This action closes the jaws on the work they are to hold or releases them. In addition, each jaw is individually adjustable by turning screws that contact the top surface of each jaw. Three sets of jaws cover a capacity range from 1/8 to 1 inch. Four sets in a second model cover 1/8 to 1 1/8 inches.

The jaws are made of tool steel with hardened and ground surfaces. The chuck is available with adapters for lathe assembly, including lathes that are threaded and that are fitted with cam locks and taper spindles. Tongued adapter plates can be ordered for stationary application as on the table of a milling machine or a drilling machine.

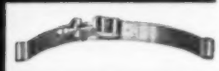
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 12300 If you write the maker

Straps and Supports

to attach fast...hold fast

Almost every manufactured product or manufacturing process requires that various components be fastened together. Traditional screws and bolts are sometimes undesirably heavy and time consuming in assembly and disassembly. These disadvantages can be overcome with Marman Straps and Supports which use a steel band to surround or support the object to be fastened and a quick easy take up screw to tighten and hold them in place. Lugs and Clips can be easily attached to the Strap or Support allowing it to perform several fastening jobs at once. In this fashion a Strap might be used to fasten a small motor in place and also to support wiring, ducting or fuel lines.



Marman Straps and Supports provide light weight, fast assembly and disassembly, and hold fast under stress and vibration. Chances are you will find they can save you time and money with products under design or in production. We'd like to work with you.

Our catalog explains further . . . Just write dept. I-12

MARMAN PRODUCTS CO. INC.
940 WEST FLORENCE AVENUE
INGLEWOOD, CALIFORNIA

BREVITY—Identify by IEN - 12301 If you write the maker

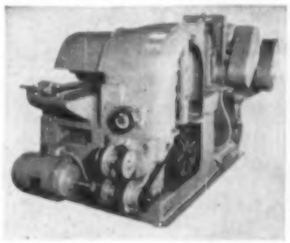
—Wherever you need them!

STACKBIN sections will give you a stockroom wherever you want it—quickly and easily as building a sectional book case. These patented sectional storage bins nest together without the use of tools—cost you nothing to build, nothing to move. Find out today how STACKBINS can lower YOUR handling costs.

IMMEDIATE SHIPMENT
Manufactured and sold in Canada exclusively by Wickware-Stackbin, Ltd., Ottawa
Write Stackbin Corp., 1077 Main St., Pawtucket, R. I.

STACKBIN SYSTEM
"Stacked and Still Accessible"

BREVITY—Identify by IEN - 12302 If you write the maker



Worthington Allspeed Drive Tandem Belt Design

Its two-belt tandem design permits the widest range of instantaneous, stepless variations . . . far greater than single belt drives.

The tandem's narrower belt reduces flex wear, increases belt life (it's less affected by side compression).

Other features: easy replacement—all wearing parts bronze bushed—shielded, life-lubricated bearings. In-line input and output shafts. Can run in any direction. Available in 6 sizes from 1-15 hp, up to 16-1 ratios. Supplied with or without standard NEMA Frame 1750 rpm motors. Upright or horizontal frame. Extended control yoke available. *Worthington Pump and Machinery Corporation, Allspeed Drive Division, Holyoke, Mass.* AS.1.6

WORTHINGTON

THE GOOD RIGHT HAND OF INDUSTRY

BREVITY—Identify by IEN - 12303 If you write the maker

NOW

an easy way to identify stainless steel "Specs"

Here's a timesaver you will find invaluable . . .

Containing much salient data on "specs," this new Frasse chart will prove a boon when you're working with stainless steels. With it a specified steel can easily be identified in less than 30 seconds—saving valuable time normally spent thumbing through individual specifications.

Compiled by Frasse Technical Service, the chart shows chemical analysis requirements for each of 37 Military, Army, Navy, Aeronautical, and Federal specifications. Also lists specified forms (bars, wire, etc.) and nearest corresponding SAE, AISI and AMS type numbers.

Printed on durable cardboard stock, the chart is regular file card size—can be tacked on wall, filed in desk drawer, or slipped under glass for ready reference.

It's furnished without charge, of course—so make your job an easier one! Send the IENquiry for this helpful chart today—and remember that Frasse Technical Field Service is always available to assist you with applications involving stainless steels.

Peter A. FRASSE and Co., Inc.

17 Grand Street, New York 13, N. Y.

Lyndhurst • Philadelphia • Buffalo • Syracuse

Call FRASSE 1st for Stainless Steels
Bars • Sheets • Strip
Plates • Angles • Wire
Tubing • Pipe • Fittings

BREVITY—Identify by IEN - 12304 If you write the maker

Insist on JOHNSON UNIVERSAL BRONZE

These bars are highest quality bearing bronze alloy, completely machined outside diameter, inside diameter and ends. No waste—no defects. You will find many uses for Johnson Universal Bronze Bars—bushings, bearings, thrust plates, washers, etc. Cored bars are available in inside diameters from ½" to 7¾", outside diameters 1" to 10", in a range of wall thicknesses. Solid bars ⅝" to 8" diameters. All 13" lengths. Available from distributors and Johnson warehouses.

SLEEVE BEARING HEADQUARTERS Since 1901

Johnson Bronze

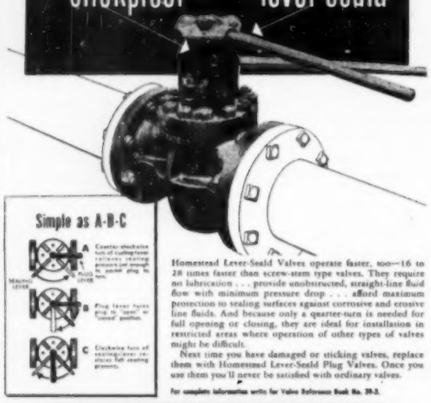
476 SOUTH MILL STREET • NEW CASTLE, PA.

BREVITY—Identify by IEN - 12305 If you write the maker

- at all times
- under all conditions
- throughout its long lifetime of service

This Homestead Valve will always work

it's stickproof because it's lever-seald



Homestead Lever-Seald Valves operate faster, too—16 to 28 times faster than screw-stem type valves. They require no lubrication . . . provide unobstructed, straight-line fluid flow with minimum pressure drop . . . afford maximum protection to sealing surfaces against corrosive and erosive line fluids. And because only a quarter-turn is needed for full opening or closing, they are ideal for installation in restricted areas where operation of other types of valves might be difficult.

Next time you have damaged or sticking valves, replace them with Homestead Lever-Seald Plug Valves. Once you see them you'll never be satisfied with ordinary valves.

For complete information write for Valve Reference Book No. 39-2.

HOMESTEAD LEVER-SEALD PLUG VALVES

HOMESTEAD VALVE MANUFACTURING COMPANY

INDIANAPOLIS, PA.

BREVITY—Identify by IEN - 12306 If you write the maker

MECHANIZE 4 Scrubbing Operations into 1

with a COMBINATION SCRUBBER-VAC!

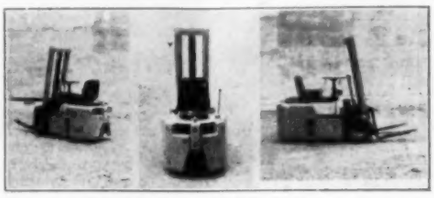
Here's a single cleaning unit that completely mechanizes scrubbing. It applies the cleanser, scrubs, rinses if required, and picks up — *in one operation!* The *self-propelled Model 213P* at right, for heavy duty scrubbing of large-area floors, has a 26" brush spread, and *cleans up to 8,750 sq. ft. per hour. Finnell* makes *Scrubber-Vac Machines* in a full range of sizes (no need to *over-buy* or *under-buy*) . . . available on either lease or purchase plan. For demonstration, consultation, or literature, phone or write nearest *Finnell Branch* or Finnell System, Inc., 2612 East Street, Elkhart, Indiana.

FINNELL SYSTEM, INC.

BREVITY—Identify by IEN - 12307 If you write the maker

TRUCK . . Engine driven fork lift, with interchangeable counterweights

Source: HYSTER CO.
2616 N. E. Clackamas St., Portland 8, Oregon



Load rating adjustable in field

New design for the company's Model-20 engine-driven fork-lift truck now includes the previously developed standard 1-ton unit based on 15-in. load centers, representing capacity to lift a 30-in. 1-ton load. Also included is a new Lightweight 20 in which a new skeleton counterweight, installed at the factory, reduces the truck weight by 600 lb. and provides a load rating of 1,300 lb. at 15-in. centers or over a 30-in. load length.

Additional weights, three in number, can be applied in the field to bring the standard unit up to 1-ton on 24-in. centers and the Lightweight unit up to 1 ton at 15 in. centers. Design of the truck itself has not been changed and is detailed on specification sheets available on request.

BREVITY—Identify by IEN - 12308 If you write the maker

SWITCH . . Single pole, double throw, plunger actuator for limit service

Source: MICRO SWITCH
30 E. Spring St., Freeport, Ill.

For built-in use

Two new units have been added to the Micro-Limit switch Type 1ML1, previously described IEN-8252-49, to provide two new actuators as shown to the right in the illustration. One is a plain plunger. In the other the plunger is equipped with an actuating roller. Both employ the same switch mechanism as in the original unit shown to the left. The actuator head can be turned 90 degrees. Overall housing dimensions are about 2¼ by 2 by 6⅝ in. for the plain assembly, 7⅛ in. for the one-equipped with a wheel.

The switch rates 20 amp. on 110-volt ac. It requires an operating force of about 6 lb. and a release force of 4 pounds. Differential travel is maximum at 0.005 inch. Over-travel is minimum at 0.5 inch. The assembly is in an aluminum housing.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

FIND WHAT YOU WANT?
See our suggestions at the index, page 110

BREVITY—Identify by IEN - 12309 If you write the maker

REALOCK FENCE

gives **locked-in** protection

All fittings on Realock Fence have bolts so placed that nuts cannot be removed from the outside. This means that Realock Fence provides *added protection* for your grounds and property . . . effectively discourages tampering by would-be trespassers.

Strongly constructed, Realock Fence has high resistance to the elements because of a special galvanizing process . . . gives permanent protection and trouble-free service year after year. For additional information write our nearest sales office or consult your classified telephone directory.

THE COLORADO FUEL & IRON CORPORATION—Denver, Colorado
THE CALIFORNIA WIRE CLOTH CORPORATION—Oakland, California
WICKWIRE SPENCER STEEL DIVISION—Buffalo, New York

REALOCK FENCE
THE COLORADO FUEL & IRON CORPORATION
CFI

BRANCHES IN ALL KEY CITIES

BREVITY—Identify by IEN - 12310 If you write the maker

Just Off The Press!

WRITE FOR YOUR COPY TODAY

New Catalog describes Complete line of GARLOCK KLOZURE* Oil and Grease Seals for Bearings *Plus* Mechanical Seals for Rotary Shafts

This new, easy-to-use Catalog contains illustrations of various types of patented KLOZURE Oil Seals—including many new designs for bearing protection, typical applications, and a complete list of sizes and part numbers. In addition, it shows Garlock Mechanical Seals for rotary shafts. Send for Catalog 10.

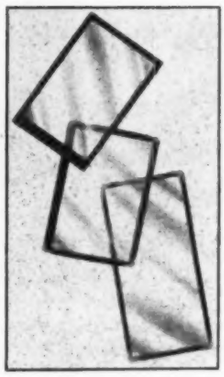
*REG. U. S. PAT. OFF.

THE GARLOCK PACKING CO.
PALMYRA, NEW YORK
In Canada: The Garlock Packing Company of Canada Ltd., Toronto, Ont.

GARLOCK

BREVITY—Identify by IEN - 12311 If you write the maker

SAVE TIME & MONEY WITH "T.P.A."* TRANSPARENT WORK RECORD HOLDERS—



REDUCE COSTLY ERRORS. KEEP WORK RECORDS CLEAN AND UNDERSTANDABLE. STEP UP JOB EFFICIENCY. Used in increasing numbers throughout defense industries. Hands may be dirty but records keep clean with "T.P.A. protection. No misunderstands." No alibis. No confusion. For work records, job ticketing, material control and many other uses.

Write for low cost data—FREE sample—while supply lasts.

All new clear plastic protection. Leatherette bound. Reinforced corners. Styles to suit your needs.

Binder envelopes — Blue Print Holders — Workshop envelopes — I.D. Card holders—Billfold inserts —Plastic specialties

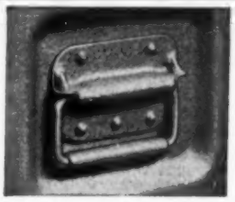
TRANSPARENT PLASTIC WORK

Trade Mark

"NAPLASCO" NATIONAL PLASTIC COMPANY
16 East 23rd Street, New York, N. Y. (GRamercy 7-1399)
8 South Dearborn, Chicago, Ill. (CEntral 6-0025)
Main Office and Factory: 2571 E. Foothill Blvd., Pasadena, Calif. (RYan 1-8147)

BREVITY—Identify by IEN - 12312 If you write the maker

We've Built a BETTER HANDLE!



FOR MANUFACTURERS OF PORTABLE EQUIPMENT, CARRYING CASES, PARTS BOXES, Etc.!

- non-rattling
- rugged construction
- rust-proof
- meets Air Force and other Government specifications

Here is the handle you have been looking for—one that is ideally suited for anything that must be lifted by a side carrying handle. Because we could not buy anywhere a satisfactory handle for the thousands of cases manufactured by Bendix and needing such an item, Bendix-Friez engineers developed this handle to meet Air Force and other Government specifications for many kinds of special equipment. The unique, rugged design of this handle, with its "snap-back" feature, is such that neither shock nor vibration will cause it to rattle. Built of aluminum and stainless steel, it can be riveted or welded to the side surfaces of any kind of container or depressed in the sides. Available in large or small lots, orders filled promptly. Write for prices.

Bendix-Friez

FRIEZ INSTRUMENT DIVISION of Bendix Aviation Corporation
1328 Taylor Avenue
Baltimore 4, Maryland
Export Sales: Bendix International Division, 72 Fifth Avenue, New York 11, N.Y.

BREVITY—Identify by IEN - 12313 If you write the maker

"FLYING SAUCER"

moves light equipment faster over obstacles

This unique new 3 1/16 in. high caster is, literally, a "Flying Saucer".

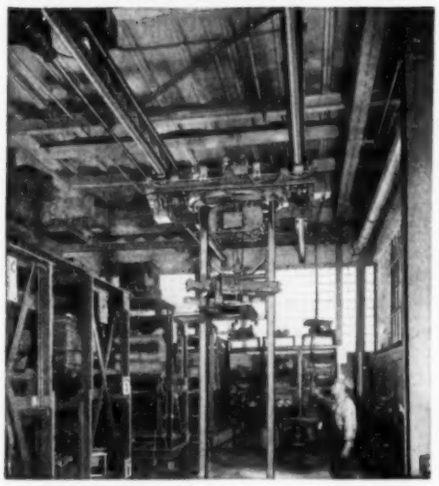
Because it rolls on a 3 in. saucer at a 45 deg. angle, it fairly flies over obstacles and rough, littered floors. An ordinary wheel would have to be twice as big to do this, and would lack this caster's low over-all height that cuts tipping danger.

Ideal for light, low equipment...shoe racks, garage equipment, dollies, laundry racks, etc. Write for free literature. Address any materials-handling problem to the world's largest manufacturer of casters, in all sizes and types. THE BASSICK COMPANY, Bridgeport 2, Conn. Division of Stewart-Warner Corp. *In Canada:* Bassick Division, Stewart-Warner-Alemite Corp., Ltd., Belleville, Ont.

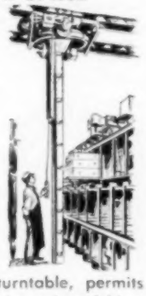
Bassick MAKING MORE KINDS OF CASTERS ... MAKING CASTERS DO MORE

BREVITY—Identify by IEN - 12314 If you write the maker

60% MORE DIES NOW STORED



ONE MAN NOW CONTROLS DIE STORAGE WITH 60% MORE DIES STORED IN THE SAME FLOOR SPACE



Without extra building, a large Mid-Western manufacturer of internal combustion engines has solved a difficult die storage problem by installing a Louden Monorail System. Capacity of the storage area has been jumped 60%, "housekeeping" efficiency has been increased, while the labor force has been reduced from several men to one-man control.

The "tiering" trolley, operating on a double-girder crane with turntable, permits easy, accurate positioning of dies in assigned bins. Complete push-button operation allows one-man control. The skid method of handling eliminates damage caused by slings or dropping.

FREE BOOK . . . Case histories of successful Monorail applications. Write for "Economical Material Handling" today.

THE LOUDEN MACHINERY COMPANY
5112 S. Superior Ave., Fairfield, Iowa

Louden

OVERHEAD MATERIAL HANDLING

BREVITY—Identify by IEN - 12316 If you write the maker

INSULATING . . Ceramic units for use in electric heating appliances

Source: SAXONBURG POTTERIES
51 Della St., Saxonburg, Pa.

Representative units are shown

Body formula has been changed in the company's line of insulator units, previously described IEN-9668-45, and a different firing procedure is now employed to produce insulators that will withstand temperatures to 2,400 deg. F. coupled with excellent resistance to thermal shock. The new material is known as the ThermO Body. The insulators are available in standard and special sizes. Standard sizes are in stock.

BREVITY—Identify by IEN - 12317 If you write the maker

HOSE . . For compressed air, hot or cold water, paint, oil, gasoline

Source: MERCER RUBBER CO.
66 Reade St., 2nd Floor, New York 7, N. Y.

One hose has many uses

Abrasoflex is a new multi-purpose smooth-bore hose with a braided rayon body. It is available with a black cover and a one or two-braid reinforcement in seven sizes ranging from $\frac{3}{16}$ to 1 in. in inside diameter. Working pressure is to 250 lb. in standard design.

BREVITY—Identify by IEN - 12318 If you write the maker

DRILLING . . Work table includes coolant pump and reservoir

Source: COMMANDER MFG. CO.
4221 W. Kinzie St., Chicago 24, Ill.

Lists at $104

Work surface measures 12 by 10 in. for this new assembly of work table and coolant-circulating equipment. The table superimposes upon the regular table of a drilling machine. Coolant is circulated by a motor-driven pump mounted vertically in one corner. It draws from inside the table casting and delivers through multiple flexible tubes for return through a trough to the interior reservoir. Flow from each nozzle can be individually adjusted. The table surface is ground. Overall dimensions are 15 by 13 by 4 inches. The pump motor stands 5½ in. above the top surface.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 12319 If you write the maker

UNIVERSAL

EXPANDED METAL FLOOR TRUCKS

MODEL 4-A
Length 60", width 30", height 30".

- Greater Economy
- Greater Utility

Literature Mailed Promptly Upon Request

MODEL 4-B
Length 60", width 30", height 48".

Durable, highly maneuverable, economically priced. Designed to meet a wide range of material handling jobs. Rigid angle iron frame. Equipped with four 4" ball-bearing fiber casters—swivel casters centered at front and rear; rigid casters centered on each side. Model 4-B has hinged drop panel on side equipped with positive safety latches.

- Also other types of expanded metal containers in sizes and quantites to customer's specifications.

INDUSTRIAL ENGINEERING & MFG. CO., INC.
BRIMFIELD, INDIANA, U.S.A.

BREVITY—Identify by IEN - 12320 If you write the maker

QUICK DELIVERY ON VALVES!

HANNIFIN *precision built* **VALVES**

for single or double-acting cylinders

Hannifin precision-built valves are *reliable*—and quickly *available!* For positive, accurate control of air-powered equipment, there is a Hannifin valve that will give long-time service in production operations.

QUICK DELIVERY IN ANY QUANTITY!

"Packless" Rotary Disc Type

Hand operated. Simple design avoids leakage, waste of power—gives positive control. Sizes ⅛" to 1¼".

Also foot-operated types—leave operator's hands free. Sizes, ¼" to ¾".

"Effortless" Sliding Disc Type

Foot operated. Fast, effortless action. Pilot operated, air pressure does the work.

Also finger-tip actuated models.

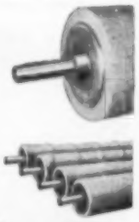
Write for Bulletins 57, 240, 241

HANNIFIN

Hannifin Corporation • 1107 S. Kilbourn Ave. • Chicago 24, Illinois

BREVITY—Identify by IEN - 12321 If you write the maker

MANY INDUSTRIAL ROLL PROBLEMS are solved by using



SHAF-TITE* ROLLS

Many patented constructions provide strongest possible shaft setting. Your choice of many different types and materials—wood, rubber, iron, brass, stainless steel plastic, etc. Whatever your roll problem, put it up to Rodney Hunt.

SEND FOR NEW CATALOG NO. 48
Most complete publication of its kind

Industrial Roll Division
RODNEY HUNT MACHINE CO.
173 Main Street, Orange, Mass.

*Reg. U. S. Pat. Off.

BREVITY—Identify by IEN - 12322 If you write the maker

Receptacles for FS-FD Pylet bodies

Watertight Plugs

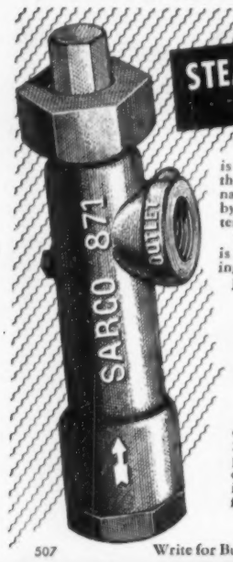
Watertight Plugs and Receptacles

WITH TRIPLOC CONTACT UNITS

These substantially built plugs and receptacles are equipped with Triploc contact units and are watertight for use as floodlight connections or for any other type of portable electrical equipment where weather protection is needed. Types include 1, 2, 3, 4, 6, and 8 pole units. Receptacles are galvanized cast iron with brass cap. Plugs are cast aluminum alloy with threaded nut and rubber bushing cord grip. Female contact units can be mounted in plug shell as well as in receptacle housing, as all contact units are interchangeable and reversible. For any type of outdoor plug and receptacle connections refer to your Pylet Catalog for complete listings.

THE PYLE-NATIONAL COMPANY
1348 North Kostner Avenue • Chicago 51, Illinois

BREVITY—Identify by IEN - 12323 If you write the maker



STEAM TRAPPING OUT-DOORS

When steam heated equipment is too far away to permit returning the condensate to the boiler, ordinary steam traps cause much waste by discharging condensate at high temperature.

If equipment is out-doors, there is the further problem of preventing freeze-ups in winter.

Meet both problems with...

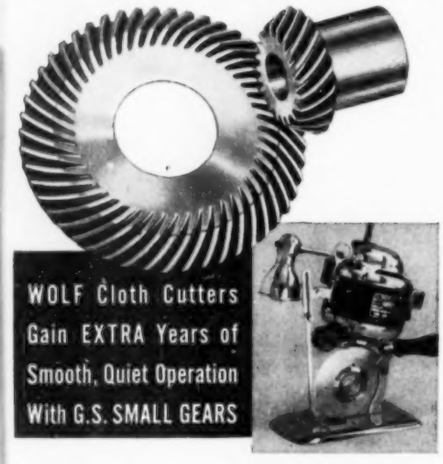
SARCO
LIQUID EXPANSION STEAM TRAPS
No. 871

This trap discharges condensate to atmosphere below 212°F regardless of inlet pressure (to 350 psi). When cold, its large discharge valve is wide open,—it cannot freeze.

507 Write for Bulletin 258 for full information.

SARCO SARCO COMPANY, INC. Empire State Bldg., New York 1, N.Y.
SAVES STEAM SARCO CANADA, LTD., TORONTO 5, ONTARIO

BREVITY—Identify by IEN - 12324 If you write the maker



WOLF Cloth Cutters Gain EXTRA Years of Smooth, Quiet Operation With G.S. SMALL GEARS

The Wolf Machine Company designs their cloth cutters "for the special convenience of the operator, to insure the highest production with a minimum of effort." Sixty years of manufacturing to highest precision standards has won an enviable quality reputation for these fine machines.

G.S. is especially pleased to have been chosen to mass produce the Fractional Horsepower Gears for Wolf Machines. We accept this responsibility secure in the knowledge that G.S. skill and experience will uniformly produce Gears to meet their most exacting specifications.

If you, like the Wolf Machine Co., are extremely particular about the Small Gearing you use, then by all means, entrust the job to G.S.! You see... we've *specialized* in making *better* Fractional Horsepower Gears for more than 30 years. More and more quality-minded manufacturers from coast-to-coast look to us for their needs. Let us give you ideas, suggestions, or cost estimates. Mail us drawings or specifications today!

SEND FOR..

Free new 6-page folder illustrating and describing G.S. facilities, Small Gearing and applications, together with handy charts. Will you ask for it on company stationery, please?

GEAR Specialties, Inc.
MEMBER OF
Spurs · Spirals · Helicals · Bevels · Internals · Worm Gearing · Racks · Thread Grinding
2635 WEST MEDILL AVE., CHICAGO 47, ILL.
WORLD'S LARGEST EXCLUSIVE MANUFACTURERS OF FRACTIONAL HORSEPOWER GEARING

BREVITY—Identify by IEN - 12326 If you write the maker

TESTING .. Contract service for field or laboratory ultrasonic work

Source: SPERRY PRODUCTS INC.
1002 Shelter Rock Road, Danbury, Conn.

Typical examples in Bulletin 50-115

The company announces establishment of a new contract service through which it is prepared to apply its Reflectoscope, previously described IEN-1915-50, to check for discontinuities in metal and plastics, and its Reflectogage, previously described IEN-10014-47, which measures the thickness of metals and materials to 4 in. with access to one side only.

Both instruments are accompanied by the company's operators to perform the tests in a customer's plant or at other designated locations in cases where it does not pay the user to own the instruments. Following the test the company supplies a report and photograph or Reflectograms for permanent record. At the same time the company's own laboratory in Danbury can be used for materials or work shipped to it with the required instructions.

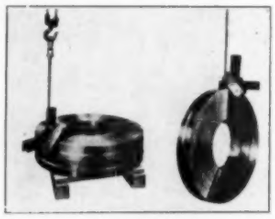
The Reflectoscope locates discontinuities in metals and plastics by directing an ultrasonic pulse beam through the material and by measuring the lapse of time for reflection from any discontinuity that is in the path of the beam. It has successfully located defects in steel as far as 40 ft. from the test surface. It is particularly suited to check metals prior to machining, for quality control of work pieces subject to stresses, for maintenance inspection of large work subject to fatigue cracks such as pressure rolls, locomotive axles, engine crankshafts and bearings. It applies for inspection of butt welds in containers and pressure vessels and in pipe lines.

The Reflectogage measures the thickness of metal by application of the ultrasonic beam on one side and by measuring lapse of time for reflection to come back from the other side. Thickness range is to 4 inches.

BREVITY—Identify by IEN - 12327 If you write the maker

HANDLING .. Strip coil grab to lift and carry coils to 2,000 pounds

Source: DIXON RESEARCH INC.
2302-6 23rd Ave., Rockford, Ill.



Lists at $96

Two arms are assembled to slide at right angles in relation to each other between rollers carried in a diagonal guide in this new Coil Grab. One arm, shown vertically to the left in the illustration, carries a thin steel finger facing inward. The other arm carries a load foot facing downward.

A chain is threaded from the upper end of the diagonal guide over a roll near the inner end of the horizontal arm back to a second roll back of the finger end of the vertical arm and up to the load hook. Lifting effort draws the two arms tightly against the coil to hold it while it is being upended and to carry it on the load foot in position shown to the right.

Overall dimensions are 15¾ by 22 by 2¾ inches. Maximum coil size that can be handled with this unit measures 10½ by 15 in. in width and in stock thickness radially. Other sizes can be built to order to meet the application.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 12328 If you write the maker

Tells how MALSBARY Steam Cleaners can cut your cleaning costs, decrease machinery downtime and reduce fire hazards.

Explains difference between heavy duty cleaners and steam vapor models.

Describes and pictures all 5 MALSBARY models; enables you to pick right size for your job.

Contains easy-to-compare chart of pressures, capacities and temperatures.

Write for your copy TODAY. No obligation. Ask for Catalog 150.

MALSBARY SINCE 1921 MANUFACTURING CO. Room 712 845 92nd Ave. Oakland 3, Calif.

BREVITY—Identify by IEN - 12329 If you write the maker

Your Fringe Costs—How Much?

Your fringe costs! How much do they add to your present production line costs? This added overhead is ever present when (1) hourly labor is not at bench or station in actual productive effort (2) when equipment is inadequate or does not deliver as a smooth efficient operation should. On the labor side with 50% of all productive labor occupied in handling and packaging fringe labor costs can be the first threat to profits. On the equipment side a second threat can be controlled by sound plans, plus equipment to do the job and timing to fit the personnel. When checkweighing is involved the type of weighing units are vital too. Use EXACT WEIGHT industrial scales for accuracy, adaptability, dependability, correct capacity, and speed of operation. Remember nothing will cut fringe costs more than the right scales in the right place. Their capacity to save time, money, product and labor have been proven numberless times by production-minded engineers everywhere. Write for details for your plant.

EXACT WEIGHT SCALES
Industrial Precision

THE EXACT WEIGHT SCALE COMPANY
932 W. Fifth Avenue, Columbus 8, Ohio
2920 Bloor St., W., Toronto 18, Canada

BREVITY—Identify by IEN - 12330 If you write the maker

CORROSION! Bond Paint Tight to Any Metal with . . .

VINSYNITE-VINYL SYSTEM

You slash metal pre-treatment costs and at the same time seal out corrosion when you use the Vinsynite-Vinyl System. The system consists of Vinsynite, which bonds tight to the metal, *any metal*, and a Vinyl coating over Vinsynite that seals out corrosion. Both are easy to apply by spray, brush or dip.

We have prepared a detailed report on the corrosive resistance of Vinsynite-Vinyl System under numerous industrial and climatic exposure conditions. One of the tests described shows a Vinsynite-Vinyl aluminum coated tube unaffected by corrosion after being subjected to standard A.S.T.M. salt-spray test for 864 hours. Other tests show the system consistently lasts more than 2000 and as high as 3000 hours before corrosion becomes evident.

Write for your copy of this report on Vinsynite-Vinyl system.

THOMPSON & COMPANY
1085 Allegheny Avenue Oakmont, Pennsylvania
Established 1847

BREVITY—Identify by IEN - 12331 If you write the maker

KEEP OUTSIDE CREWS WARM WITH PROPANE* PORTABLE HEAT

● With this new Mutual industrial heater you can help eliminate absenteeism this winter by insuring greater comfort and working efficiency for outside crews. This handy Portable Propane Heater is easy and safe to use. Ideal for telephone workers, construction and field survey shelters, small army type field tents, brooders, milking sheds and many industrial uses.

11,000 B.T.U.

Starts instantly without pumping or priming. Burns clean without smoke or gas fumes. May be used in confined quarters. Has heavy steel bottom to prevent tipping. Heating unit available with or without Propane cylinder. ORDER NOW WHILE STOCKS ARE AVAILABLE.

BENCH TYPE

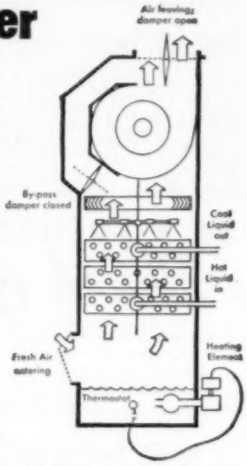
*Liquefied Petroleum Gas

Mutual LIQUID GAS EQUIPMENT CO., Inc. 5400 WEST IMPERIAL HIGHWAY, INGLEWOOD, CALIF.

BREVITY—Identify by IEN - 12332 If you write the maker

NIAGARA Aero Heat Exchanger

1. Extends quenching capacity without extra water or cooling tower.
2. Quickly pulls down heat at initial peak load of Quenching.
3. "Balanced Wet Bulb" Control holds quench bath at proper temperature, heating if needed to start after shut-down, and cools or heats by automatic control.
4. Saves cleaning expense as compared to cooling tower which picks up acids and fumes from air.



APPLICATIONS
Quench Oils
Cutting Oils
Lubricating Oils
Cooling Water

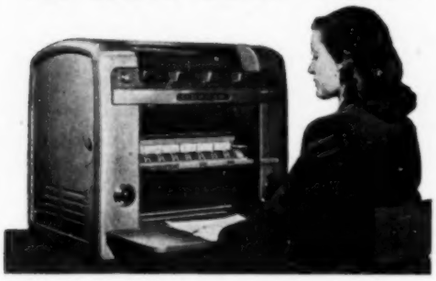
For help in increasing production, saving of cooling water, write for Bulletin No. 120. Address

NIAGARA BLOWER COMPANY
Over 35 Years of Service in Industrial Air Engineering
Dept. EN, 405 Lexington Ave. New York 17, N. Y.
Experienced District Engineers in all Principal Cities

BREVITY—Identify by IEN - 12333 If you write the maker

Now! The OZAMATIC... Desk-Top Machine

MAKES DIRECT COPIES AT NEW LOW COST!



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Ozalid's new Ozamatic produces clear, exact copies of anything drawn, typed, printed or written . . . any width up to 16", any length . . . on a variety of papers, cloths or foils.

It copies by light transmission at high speed—direct from any translucent original . . . at about 1½c per letter-size copy.

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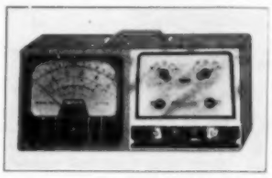
"From Research to Reality"
Ozalid in Canada—Hughes Owens Co. Ltd., Montreal

BREVITY—Identify by IEN - 12335 If you write the maker

METER . . Electronic meter for voltage and resistance readings

Source: PRECISE DEVELOPMENT CORP.
997 Long Beach Road, Dept. IEN, Oceanside, N. Y.



List is about $60

Model 907 is a new vacuum-tube voltmeter available in horizontal assembly as shown in the illustration or in vertical arrangement of its 7½ in. dial and its control panel. There are six ranges for both ac. and dc. to a maximum of 1,000 volts. Resistance reads in five steps from 0.01 to 1 billion ohms. Frequency range, not including the accessory probe, is about 250 megacycles with a maximum at 30,000 volts. Overall dimensions are 16 by 5 by 8 in. in the horizontal design. Weight is 15 pounds.

BREVITY—Identify by IEN - 12336 If you write the maker

BRAZING . . Alloy of gold, copper, nickel, for electronic components

Source: WESTERN GOLD & PLATINUM WORKS
587-91 Bryant St., Dept. E, San Francisco 7, Calif.

Exceptional penetration

Nicoro trade names a new proprietary alloy of gold, copper and nickel to serve as a replacement for the conventional 35 per cent gold, 65 per cent copper alloy. It is designed for brazing copper to Kovar, copper to copper, molybdenum to nickel in assembly of components for electronic tubes.

Characteristics include low vapor pressure, excellent flow characteristics and good tensile strength. The small grain structure minimizes the possibility of leakage through the intergranular boundaries of the braze metal.

Melting range is 980 to 1,025 deg. C. as compared to 970 to 1,010 deg. C. for the gold-copper alloy. Available forms include wire, measuring 0.080 to 0.010 in. in diameter, sheet measuring 0.004 and 0.002 in. in thickness and ribbon measuring 0.062 by 0.020 and 0.0025 by 0.045 inch.

BREVITY—Identify by IEN - 12337 If you write the maker

DRAFTING . . Maple table with hinged basswood drawing top

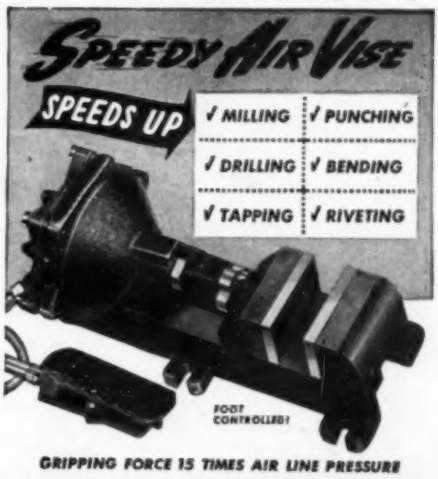
Source: KINGSLEY MFG. CO.
746-50 E. 82nd St., Cleveland 3, Ohio

Top remains true

Sizes start at 60 by 36 in. with height at 37 in. for this new drafting table. The top hinges up to a 55-deg. angle. It is made of solid basswood 1 1/16 in. in thickness. A maple apron protects large drawings. A double foot rest is provided. The table is shipped in six flat sections for assembly by the user. Woodloc fasteners are provided at the assembly points. Corners and edges are rounded. A tool drawer and a tracing drawer can be added.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

BREVITY—Identify by IEN - 12338 If you write the maker



GRIPPING FORCE 15 TIMES AIR LINE PRESSURE

Speedy Air Vise helps you do dozens of operations faster, better, cheaper—by air pressure! Foot control valve opens and shuts vise instantly, leaving *both* hands free to produce *more!* Jaw opens up to 3 inches, holds castings, parts, jigs, etc. Compact and trouble-free.

Complete with Foot Control, Air Hose and Fittings.....only **$29.90**

Prompt Delivery from Your Supplier or Write Direct
W. R. BROWN CORPORATION • 2645 N. Normandy Ave., Chicago 35, Ill.

AIR REGULATORS • AIR FILTERS • AIR GUNS • PORTABLE COMPRESSORS

BREVITY—Identify by IEN - 12339 If you write the maker

MERCURY LIGHT-DUTY **"TUG"**

ELECTRIC TRACTOR

3 Wheel Model

The ideal haulage unit where floor, elevator capacities or operating space are limited. Tractor is only 70" long and 34" wide. Develops a maximum draw bar pull of 1,000 lbs. — sufficient to move a trailing load of 25 tons on smooth surface. Complete description and specifications in Bulletin 180-1. Request your free copy.

MERCURY MANUFACTURING COMPANY, 4132 S. Halsted Street, Chicago 9, Ill.

BREVITY—Identify by IEN - 12340 If you write the maker

SPRACO NOZZLES

Write for NOZZLE CATALOG *to*
SPRAY ENGINEERING CO.
110 CENTRAL STREET • SOMERVILLE 45, MASS.

BREVITY—Identify by IEN - 12341 If you write the maker

HEVI DUTY ELECTRIC COMPANY

FOR TEMPERATURES FROM 1700° F. TO 2600° F.

Use The

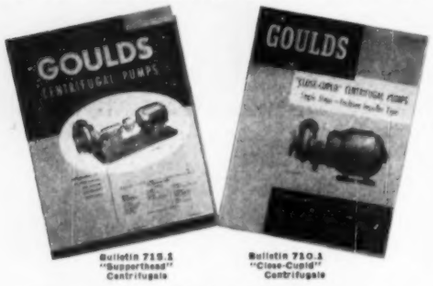
HEVI DUTY G-05-PT FURNACE

Inside Diameter
4⅛"W. x 7"L. x 2¼"H.
3500 WATTS
Write for Bulletin LAB-250A

☆ Less Heat Loss — Improved Insulation and No Rheostats
☆ Better Control — Through a 48 Step Tap Changing Transformer
☆ Easily Replaceable Silicon Carbide Type Heating Elements
☆ Indicating Pyrometer and Tap Switches Mounted in Sliding Drawer

HEVI DUTY ELECTRIC COMPANY
HEAT TREATING FURNACES HEVI-DUTY ELECTRIC EXCLUSIVELY
DRY TYPE TRANSFORMERS — CONSTANT CURRENT REGULATORS
MILWAUKEE 1, WISCONSIN

BREVITY—Identify by IEN - 12342 If you write the maker



Bulletin 715.5 "Supporthead" Centrifugals

Bulletin 710.3 "Close-Cupid" Centrifugals

These new bulletins make it easier for you to select the right pump

These new bulletins have been designed to help you. New sizes are listed, and, in each bulletin we have put a composite rating chart which includes both "Close-Cupid" and the supporthead. This makes it dead simple to put your finger on the right pump for your requirements.

Another valuable feature of these bulletins is the parts chart. Using this you see exactly what parts are interchangeable for all size pumps and so can keep your spare parts investment to a minimum.

Send for these useful FREE bulletins *today*. Goulds Pumps, Inc., Seneca Falls, N. Y.

Goulds PUMPS INC. Seneca Falls New York

BREVITY—Identify by IEN - 12343 If you write the maker

MODERN TIME AND COST SAVERS BUILT BY... Standard GRAVITY & POWER CONVEYORS

LIFT OR LOWER —FLOOR TO FLOOR OR CONVEY HORIZONTALLY... WITH A STANDARD UTILITY BELT-VEYOR

Move packages and commodities from basement to first floor, or any floor to floor, or convey in a straight line — continuously with the Standard UTILITY BELT-VEYOR. A compact, pre-engineered unit, easy to install (over existing stairways where practical) handles commodities up to 150 lbs. — available in 4 belt widths — 10, 14, 20 and 24 inch. Electric motor operated. Write for Bul. 63-B — address Dept. IEN-121.

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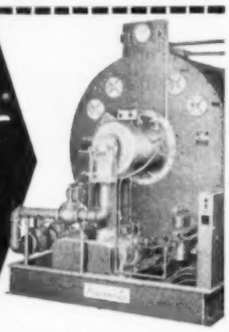
General Offices: North St. Paul 9, Minn.
Sales and Service in Principal Cities

BREVITY—Identify by IEN - 12344 If you write the maker

ONLY THE *Powermaster* GIVES YOU ALL 3 ADVANTAGES



1. Wide range between high and low fire—you use less fuel. **2.** Freedom from carbon cuts clean-up time and expense—usually by 50%. **3.** Change from oil to gas (or gas to oil) in a few minutes.

To Cut Your Steam Costs Mail Coupon Today

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Please send my free copy of the POWERMASTER catalog.

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Reviews and announcements to keep you informed on sources of special assistance for your daily problems. Subjects include unusually helpful manufacturers' literature, textbooks of industrial interest, slide films and motion pictures on training or product description, unusual applications of existing equipment, formation of new service organizations, new processes, expositions, conventions. Copies of printed material and films are available. Any limiting conditions are named.

BREVITY—Identify by IEN - 12345 If you write the maker

ALUMINUM . . Available motion pictures on aluminum are summarized in new booklet

Reynolds Metals Co.
2502 S. Third St., Louisville 1, Ky.

Information on aluminum available from the company is listed in condensed manner by new 6-page pocket folder AD-2A, "Literature and Movie Index". There are seven 16-mm. motion pictures listed, some in color. Literature is listed by subject.

BREVITY—Identify by IEN - 12346 If you write the maker

BATTERIES . . Information on power trucks on unit load handling and on batteries in booklet

Thomas A. Edison Inc.
49-53 Lakeside Ave., West Orange, N. J.

Unit-load method of material handling is the first of three sections in revised 32-page "Modern Material Handling" booklet. It shows types of product handled, time and motion analysis, use of power and motorized hand trucks. Second section describes power requirements of industrial trucks. Final section covers the characteristics of the company's nickel-iron-alkaline storage batteries.

BREVITY—Identify by IEN - 12347 If you write the maker

BEARINGS . . Full size sectional drawings of ball bearings to assist in drafting or tracing

New Departure Div., General Motors Corp.
267-71 N. Main, Bristol, Conn.

Twelve sheets, printed front and back, are supplied in a file folder which the company will send you on request. Sectional views of its ball bearings are reproduced full size to assist in layout, drafting, tracing. Each drawing is identified by number and instructions. Ask for Bulletin LF.

BREVITY—Identify by IEN - 12348 If you write the maker

BENDING . . Sheet metal tables of bend allowance and setback in new booklet

Jants, Johnson & Shipman
9042-46 Ione Lane, St. Louis 23, Mo.

"Sheet Metal Tables" titles new 32-page pocket-size booklet, list price $1, that tabulates amount in inches of bend allowance and setback in bending sheet metal from .010 to .125 inch. It contains answers to about 10,000 problems.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

BREVITY—Identify by IEN - 12349 If you write the maker

DANLY

KNURLED SOCKET HEAD®
Cap Screws AND *Stripper Bolts*

Knurled heads assure a firm finger grip for quick setting by hand . . . key type hexagon socket wrenches assure easy driving, even in awkward locations . . . precision threads assure greater thread bearing and resistance to stripping.

Send for this folder for complete catalog and purchasing information.

DANLY MACHINE SPECIALTIES, INC.
2100 South Laramie Avenue, Chicago 50, Illinois

PRECISION DIE SETS AND DIEMAKERS' SUPPLIES

BREVITY—Identify by IEN - 12350 If you write the maker

Old Brushes Never Die

IF YOU USE CABOT'S *Brush Cleaner*

Cabot's Brush Cleaner keeps new brushes in top shape — returns old brushes to useful service. Non-inflammable Cabot's Brush Cleaner smacks out hardened paint, varnish or tar right down to the heel — leaves bristles soft and flexible. Economical — can be used over and over.

• **Write Today for Free Sample**
See for yourself why Cabot's is the finest Brush Cleaner on the market!

SAMUEL CABOT, INC.
1233 Oliver Building, Boston 9, Massachusetts

BREVITY—Identify by IEN - 12351 If you write the maker

Will Plastics Work For You?

FAST... DEPENDABLE SOURCE OF SUPPLY

Name Plates • Dials
Scales • Diagrams, Etc.

Specify Type to Suit Your Requirements

1. Laminated Thermoplastic — heat to 125°F, waterproof, grease and oil resistant, available in white, clear, and many colors.
2. Laminated Thermosetting plastic—heat to 275°F, water, grease and oil resistant, available in white and many colors.
3. Engraved Thermosetting plastic—heat to 275°F, water, grease and oil resistant, available in black, white and grey with color filled letters if desired.

Quantities: From one up.

Let us recommend and quote on the proper material to fill your specific requirements.

ALLEGHENY PLASTICS, INC.
391 CHESTNUT ROAD SEWICKLY, PA.

BREVITY—Identify by IEN - 12352 If you write the maker

OHIO ADJUSTING SCREWS

Ohio ST Thumb Screws

The shoulder will cover lock washers, wide wing spread.

Thread Sizes, No. 10-24 to 1/2-20

Materials: — Low Carbon Steel and Brass.

Ohio FS Adjusting Screws

Thread Sizes, No. 10-24 to 1/2-13

Material: — Low Carbon Steel or Brass.

Turned easily by the fingers, pliers, monkey wrenches or socket wrenches.

Actually a triple purpose screw

1. Adjusting Screws
2. Leg Levellers
3. Self Locking Crating Bolts

For list of stock sizes and samples, send to

THE OHIO NUT & BOLT COMPANY
604 FRONT ST., BEREA, OHIO

BREVITY—Identify by IEN - 12353 If you write the maker

here's your ANSWER to the

colored wire shortage!

E-Z CODE WIRE MARKERS simplify the assembly of wiring circuits by number or standard NEMA color code—answer problems created by a colored wire shortage. They maintain accuracy...minimize rejections...simplify inspection...and get the most from new, inexperienced employees, even when assigned to the most complicated wiring projects. E-Z Codes, with the exclusive Speed-Tab, are faster to remove from carrying card, quicker to apply *(without moistening)* and adhere permanently to wire and cable, even when pulled through conduit. They are unaffected by heat and humidity. E-Z Codes are the efficient, low-cost answer to your colored wire shortage problem.

WRITE FOR SAMPLES TODAY!

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740 Luckystone Avenue
St. Louis 22, Mo.

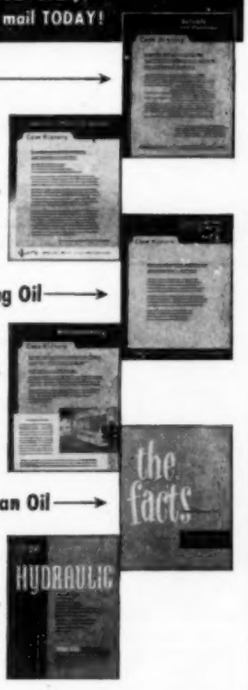
BREVITY—Identify by IEN - 12354 If you write the maker

Ford Motor Co. saves 96.5% on COOLANT FILTRATION COSTS with HONAN-CRANE Equipment

GET THE DETAILS!

These case histories and "Clean Oil Bulletins" describe how industrial plants, large and small, save thousands of dollars annually with Honan-Crane Oil Purification and Handling Equipment.

TEAR OUT THIS AD, check the boxes and mail TODAY!



☐ **Soluble Oil Coolant** → Case Histories: Ford Motor Company and Milwaukee Gas Specialty Co.

☐ **Chip and Waste Removal** → Case Histories: Manufacturer of Fine Automobiles and Minneapolis Electric Castings Company. (Houdaille Conveyor Systems.)

☐ **Machine Tool Cutting Oil** → Case History: Wagner Electric Corp., St. Louis.

☐ **Oil Quenching** → Case Histories: Cleveland Graphite Bronze Co., Ft. Wayne Works of International Harvester and Salisbury Axle Division of Dana Corporation.

☐ **The Facts About Clean Oil** → 14-Page booklet describes highly profitable advantages of oil purification in wide variety of industries. Gives brief case histories.

☐ **Hydraulic Bulletin** → 8-Page booklet tells how Honan-Crane Equipment reduces downtime and costly repairs on hydraulic presses, machine tools, plastic molding machines, etc.

NAME
TITLE
COMPANY
ADDRESS
CITY STATE

CLEAN OIL ENGINEERING

Honan-Crane Corp.
802 WABASH AVENUE
LEBANON, INDIANA
A Subsidiary of **Houdaille-Hershey Corp.**

NEWS NOTES—Continued

"Manual on silver-alloy brazing"

BREVITY—Identify by IEN - 12356 If you write the maker

BRAZING . . Pocket data book on silver-alloy brazing methods and materials

American Platinum Works
229-33 New Jersey Railroad Ave., Newark 5, N. J.

Properties of silver brazing alloys, fluxes, metal preparation, alloy selection, joint design, use of preforms, are among the topics covered by new 48-page "Silvaloy Brazing Manual". Instructions are given on preparation for brazing, procedure by torch, furnace, resistance and induction brazing methods.

BREVITY—Identify by IEN - 12357 If you write the maker

CALENDAR . . For the drafting room, arranged by weeks with large date numerals

Frederick Post Co.
P. O. Box 803-A, Dept. Z, Chicago 90, Ill.

Company offers to send you on request a copy of its 1952 weekly wall calendar. Tear-off sheets at the bottom are printed in large numerals by weeks and smaller numerals for current, past and next month. Each sheet carries information on engineering and drafting materials.

BREVITY—Identify by IEN - 12358 If you write the maker

CASTING . . Details on the Croning process to produce sand cores and molds for foundry use

Bakelite Div.
30 E. 42nd St., Dept. 1503, New York 17, N. Y.

Thirteen steps in the production of a casting by the Croning process are shown by pictures in new 20-page Bulletin J685A, "Bakelite Phenolic Resins for Foundry Molds and Cores". Separate description covers the process point by point. They include pattern heating, application of a resin-sand mix, curing with heat, removal of the fused crust, pouring into the mold thus formed, removal of the finished casting.

BREVITY—Identify by IEN - 12359 If you write the maker

CLEANING . . Recommended procedures for cleaning steel parts before electroplating

Oakite Products Inc.
116A Thames St., New York 6, N. Y.

Preclean, rinse, reverse current, and use of the company's Composition No. 90 form the procedure recommended in new 28-page pocket-size booklet, "Four Good Steps toward Better Electroplating on Steel". Illustrated steps and reasons for them are given together with five suggested cleaning cycles.

BREVITY—Identify by IEN - 12360 If you write the maker

CONTROLS . . Basic information in booklet on application of servo-mechanisms to process control

Minneapolis-Honeywell Regulator Co.
4456 Wayne Ave., Philadelphia 44, Pa.

Description of how servo-mechanisms can be used in process control is presented in non-technical manner by new 24-page pocket booklet. Title is "Servomechanism Techniques in Modern System Engineering". Little schematic diagrams are used as illustrations. One analogy compares steering an automobile along a winding road to a closed-loop control assembly to point out the elements involved.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58

BREVITY—Identify by IEN - 12361 If you write the maker

KWIK-MIX Moto-Bug® FORK LIFT

FOR ONE-THIRD TO HALF THE COST of other industrial lift trucks, here is the Moto-Bug Fork Lift . . . has 1,000-lb. load capacity, and 2½-foot lifting height. Simple, power-driven hydraulic pump raises and lowers load. Forks are 20 in. long (30 in. optional) . . . quickly adjustable to 33-in. width for pallets, boxes, barrels, crates.

Weighing only 1400 lbs., Moto-Bug Fork Lift safely works over old warehouse floors, in elevators, on light ramps. Overall width is only 32 in. Turns around in its own length, has full speeds forward, reverse . . . climbs 20% ramps fully loaded.

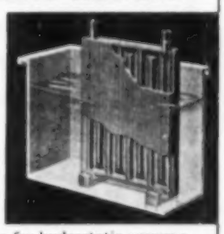
At still lower cost, a 500-lb. cap. Fork Lift with manual hydraulic pump also is available. Both sizes are interchangeable with 1200-lb. flatbed, 10 cu. ft. hopper, and scraper blade.

Contact your Kwik-Mix distributor or write to us for bulletin.

KWIK-MIX CO. FORT WASHINGTON, WIS. (Borhring Subsidiary)

BREVITY—Identify by IEN - 12362 If you write the maker

Udylite IMPERVITE GRAPHITE PLATE HEATERS



These plate type heat exchangers are specially designed for either heating or cooling pickling and plating tanks. They are built to withstand considerable shock—both mechanical and thermal. The maximum recommended operating pressures are 50 P.S.I. gage for steam and 75 P.S.I. gage for hydrostatic pressure. Adequate heating or cooling capacity for any size tank can be attained by cementing together basic plate sizes in various combinations.

IMPORTANT: When placing order be sure to include the following information: Type of solution, length of heat-up period in hours, cubic feet volume of solution, operating temperature (°F) of tank, steam temperature (°F) and pressure (PSI).

THE UDYLITE CORPORATION
DETROIT 11, MICHIGAN
PIONEER OF A BETTER WAY IN PLATING

BREVITY—Identify by IEN - 12363 If you write the maker

THEY GRIND--NOT JUST RUB!

The RPM's stay up while grinding . . . not only when the grinder runs idle.

It is an established fact that surface speeds must stay up to approximately a mile a minute if you want to grind . . . not just rub. Every mechanic knows this, but an inexperienced buyer may order tools that maintain proper grinding speeds only when running idle. The speed of Kipp air grinders drops but slightly when put to work. That means better work . . . longer wheel life.

MADISON-KIPP CORP.
224 Waubesa St., Madison, Wis., U.S.A.

Write for KIPP Air Tool Catalog AT 3006

BREVITY—Identify by IEN - 12364 If you write the maker

HIGH EFFICIENCY

DUST CONTROL

with DUCLONE COLLECTORS

- Because each DUCLONE COLLECTOR is tailor-made for specific use . . . in proper balance — in shape, size of clone and vortex — in relation to air velocity.
- Because scientifically designed and built to eliminate all destructive eddy currents and resistance to centrifugal action.
- Because only DUCLONE is equipped with inlet control and adjustable vortex shield to give highest performance efficiency.
- Expertly engineered . . . simple and sturdy construction . . . assure long, continuous, heavy duty service.
- *A DUCON engineer will gladly confer with you on any dust problem.*

Write for descriptive, illustrated catalog DC49-1

The DUCON Co.
MINEOLA, N. Y.

BREVITY—Identify by IEN - 12365 If you write the maker

Ask Sta-Warm to tailor compound melting equipment to your requirements

YOU'LL then get the right amount of melted compound in the right place at the right time . . . and at lowest over-all long-time cost.

The Sta-Warm Method helps you keep costs down and production up to schedule. There's no obligation on your part if you want to open with a barrage of pointed questions about your own compound melting problem. *Ask Sta-Warm today for recommendations.*

50 gal. compound melter with motor driven agitator and molasses gate valve. Standard Sta-Warm compound melters range from tiny hand held wax melters to 1,000 gal. mother tanks. Accessories and fittings to suit.

Sta-Warm ELECTRIC CO.
560 N. CHESTNUT ST., RAVENNA, OHIO

BREVITY—Identify by IEN - 12366 If you write the maker

SAFER LOAD BREAKING

New Switch Withstands Heavy Short Circuits Without Damage

For the first time in a safety switch, magnetic repulsion is used to break loads quickly, safely.

The unique "arc-quenching" action of Trumbull's HCI (High Capacity Interrupter) Type A switch provides extra safety and lengthens contact life by preventing pitting.

Other safety features: no exposed live parts when switch is OFF and door is open . . . no faulty indication—switch is either fully ON or fully OFF. Underwriters' Laboratory Approved.

Write for Bulletin TEC-10.

TRUMBULL (T) ELECTRIC
Department of General Electric Company
PLAINVILLE, CONNECTICUT

BREVITY—Identify by IEN - 12367 If you write the maker

Counts Batch Quantities Automatically

A BIG Labor Saver
Eliminates Hand Counting
Stops over-count losses and under-count complaints
Speeds production

Used for years in Steel and Paper Mills; Factories and Breweries; Can, Carton, Bottle Cap and Printing Plants, etc.

Monitor Automatic Batch Counter

Counts any desired batch quantity of parts, sheets, lengths, etc., and automatically controls packaging, separating, diverting and marking devices—*without slowing down production and without missing a single count.*

Send for case histories.

MONITOR Automatic BATCH COUNTERS
Catalog and Case Histories

PRODUCTION INSTRUMENT CO.
700-10 W. Jackson Blvd., Chicago 6, Ill.
Send case histories showing economies effected by Monitor Batch Counters.
Company_____
Name_____ Title_____
Street_____ City_____ Zone____ State____
MB-4

NEWS NOTES—Continued

"Basic information on metal cutting"

BREVITY—Identify by IEN - 12368 If you write the maker

CONVEYING . . House publication issue shows conveyor uses from diamond mines to macaroni

Stephens-Adamson Mfg. Co.
231 Ridgeway, Aurora, Ill.

Volume 198 of the company's paper, "The S-A Conveyor", describes a range of applications for conveying equipment. Some include coal handling for power plants, flour for macaroni making, salt in a metallic-sodium plant, bauxite from mine to ship, ore in diamond mining. Ask to have your name added to the mailing list if your interest lies in conveying.

BREVITY—Identify by IEN - 12369 If you write the maker

COPPER ALLOYS . . Corrosion data, information on properties and forms in new bulletin

American Brass Co.
696-700 S. Main St., Waterbury 20, Conn.

Publication B-36 is new 28-page bulletin, copyright date 1950, that carries the title, "Corrosion Resistance of Copper and Copper Alloys". It describes theory of corrosion, types of corrosive attack, rating charts for 19 alloys against materials from Acetic Acid to Zinc Sulphate. Six pages tabulate composition, forms available, physical properties of the alloys.

BREVITY—Identify by IEN - 12370 If you write the maker

CUTTING . . Technical paper reprint on the action of metal cutting and cutting fluids

Cincinnati Milling Machine Co.
Marburg & Kline Sts., Cincinnati 9, Ohio

Hans Ernst, company's Director of Research, is author of a technical paper which has been reprinted as 28-page Booklet M-1740. Title is "Fundamental Aspects of Metal Cutting and Cutting Fluid Action". It shows chip formation and the mechanics involved, test results, influence of cutting fluids.

BREVITY—Identify by IEN - 12371 If you write the maker

DEFENSE PRODUCTION . . Book of methods reprints articles on ordnance production operations

E. F. Houghton & Co.
301-5 W. Lehigh Ave., Philadelphia 33, Pa.

Manufacturing methods on shells, cannon, small arms, ammunition, rockets are described in new 52-page book, "Defense Production Data". Distribution is limited to metal-working plants filling defense orders. The information is in the form of articles, some new, others from previous issues of the company's publication, "The Houghton Line".

BREVITY—Identify by IEN - 12372 If you write the maker

DRIVES . . Application examples of clutches and hydraulic drives in house paper

Twin Disc Clutch Co.
1401 Racine St., Racine, Wis.

"Cross Country Issue" of the company's house publication, "Production Road", describes about 60 applications of its friction clutches and hydraulic drives with the idea of possibly suggesting a use in your own equipment. They cover a variety of industry in products such as machine tools, tractors, conveyors, excavators. The company will send you a copy.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 12373 If you write the maker

REMOVES FUMES—DUST FASTER!

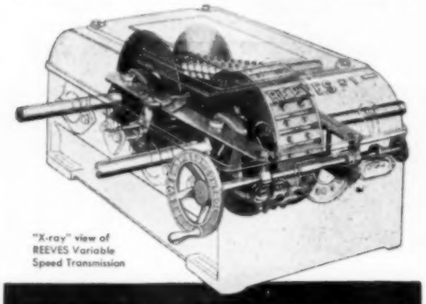
High Quality PRESSURE BLOWER

only $49.50
REG. PRICE $70.00

For the fast, efficient elimination of welding fumes, sawdust, or other air impurities, you can depend on this precision-made, all-aluminum high-pressure blower. Made with 5½" inlet and 3½" outlet. Enclosed ¼ H.P. Westinghouse single phase motor, 115 V., A. C., provides 3450 R.P.M. and up to 450 C.F.M. Immediate delivery! Ask for #BL50W.

STANDARD ELECTRIC MFG. CO., INC.
WEST BERLIN, N. J.

BREVITY—Identify by IEN - 12374 If you write the maker



"X-ray" view of REEVES Variable Speed Transmission

REEVES Variable Speed Transmission

Provides positive, accurate speed changes—without stopping machine—to meet the requirements of every operation and operator, under every changing condition. Easily applied to machines in service—requires no special tools or training to maintain. Horizontal and vertical designs, open or enclosed—in sizes fractional to 87 hp; speed ratios 2:1 through 16:1; manual or automatic controls. Internal operating parts also available for easy incorporation within the framework of your machines. Get full details on the complete REEVES line. Write for free Catalog IN 71-G.

REEVES PULLEY COMPANY • COLUMBUS, INDIANA

BREVITY—Identify by IEN - 12375 If you write the maker

Consult Hertner for battery charging equipment for driver ride trucks or motorized hand trucks

"KX" Charg-O-Matic Line

Single or multiple circuit models are available for charging driver-ride electric trucks. The single standardized circuit line is available in 13 models for charging lead acid batteries and 7 models for charging Edison batteries. For central station charging the unitized switchboard is provided in sections with a motor generator set for charging two or more batteries simultaneously.

"HX" Chargo-O-Matic Line

Single or four circuit models are available for charging motorized hand truck batteries—a series for lead-acid batteries and a series for Edison batteries.

Double Duty Charge Control

An accessory for automatically charging two batteries from either an "HX" or "KX" single circuit battery charger.

Special-built Battery Chargers

Where battery charging equipment is needed to do a special job, Hertner engineers and modern plant facilities are available to produce a charger to fit any requirement.

Standard Models for Immediate shipment. For complete information consult your electric truck or Hertner representative, or write direct.

THE HERTNER ELECTRIC COMPANY
12690 Elmwood Avenue • Cleveland 11, Ohio
A General Precision Equipment Corporation Subsidiary

Motors • Motor-Generators • Generator Sets • Representatives in Principal Cities

BREVITY—Identify by IEN - 12376 If you write the maker

High Speed Stud Driving

• A FAST OPERATION TIMED IN SECONDS!

This tool is used by a majority of plants where stud driving is done on a high production basis. Can be operated at any speed which is safe for driving the stud. (It is not necessary to stop rotation at any time.)

- AUTOMATIC TAKE-UP FOR WEAR ON JAWS
- REVERSING POSITION OF CLUTCH GIVES DOUBLE WEAR AT HALF COST
- AFFORDS ACCURATE PROJECTION HEIGHTS
- USE WITH ANY AIR OR ELECTRIC DRILL OR DRILL PRESS

Write for Free Literature, TODAY!

TITAN TOOL CO.
Production Tools
52 Main St., FAIRVIEW (Erie County), PA.

BREVITY—Identify by IEN - 12377 If you write the maker

AO's NEW INEXPENSIVE ALL PLASTIC GOGGLE

LIGHTWEIGHT NON-FOGGING WELL-VENTILATED NON-FLAMMABLE WELL-FITTING

Made of impact resistant plastic, this one-piece goggle (AO479 Clear, AO480 Green) is "optically correct" and meets government specifications. It affords exceptional wide angle vision and can be worn over most standard types of personal glasses and most prescription spectacles and goggles. Recommended for protection against foreign particles striking from any direction on the following types of work: babbiting, chipping, cutting rivets, grinding, hand-tool operations, machine operations, spike driving and similar operations. Your nearest AO Safety Products Representative can supply you.

American Optical
SAFETY PRODUCTS DIVISION

Southbridge, Massachusetts • Branches in Principal Cities

BREVITY—Identify by IEN - 12378 If you write the maker

MORE SOLD THAN ANY OTHERS

Write for Catalog

OF USES AND SPECIFICATIONS

GENERAL

Industrial Pneumatic Tires

..SAVE TIME·LABOR·MONEY

Protect equipment and floors • Reduce Breakage

- ★ *Wide Base Wheel*
- ★ *More Air Volume*
- ★ *More Stability*
- ★ *More Load Capacity*
- ★ *Longer Miles in Hi-Speed Service*

Available separately or in assemblies of Tires, Tubes and Wheels. Size O. D. 8" to 27"—200 to 4000 lbs. cap. for low and high speeds.

Rigid* CASTER FORKS *Swivel

Wide-base caster forks engineered to carry heavier loads without adding dead weight to equipment. Available in identical pairs in a wide range of sizes.

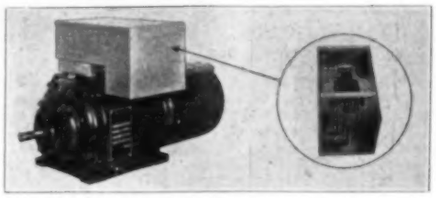
Send for Catalog • Dept. 3

THE GENERAL TIRE & RUBBER CO. AKRON, OHIO

BREVITY—Identify by IEN - 12380 If you write the maker

DRIVE .. Variable speed unit mounts remote control adjusting motor

Source: GRAHAM TRANSMISSIONS INC.
3756 N. Holton St., Milwaukee 12, Wis.



Press a button to change the speed

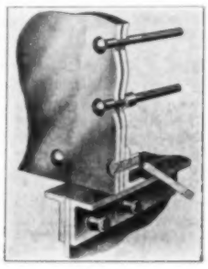
New control for remote push-button actuation is now available for the company's infinitely-variable speed transmission in sizes from $\frac{1}{2}$ to 5 hp. The control applies on new assemblies and also on those now in service to drive the speed-changing mechanism so output speed of the unit can be set or changed as desired from a remote location.

Assembly includes a 25-volt 60-cycle ac. reversible motor with a 300-to-1 gear reduction that delivers a torque of 6 in. lb. at a speed of 4.5 rpm. The motor is suited for continuing operation at locked rotor current, can be stalled continuously. Also in the assembly is a 110-to-25-volt transformer to supply power to the motor, a terminal block and a potentiometer secured to the control dial and connected to a rectifier-type voltmeter located at the remote control point to indicate the speed at a given setting. The equipment is enclosed in a rectangular metal housing that rides the transmission housing and is secured to it by four bolts.

BREVITY—Identify by IEN - 12381 If you write the maker

FASTENING .. Grooved pin and collar for application by pneumatic tool

Source: CHERRY RIVET CO.
229-33 Winston St., Los Angeles 13, Calif.



Grooved, not threaded

Lock Bolt trade names a new fastening in which a grooved and headed pin is inserted through a hole in a sheet assembly from one side to take a collar that slides into place from the other side. A pneumatic tool is applied on the end grooves to push against the collar and pull on the pin in order to tighten the sheet assembly in place. This action is followed by swedging to close the collar down into the groove near the head end. Finally the pin is broken just outside of the collar and the fastening is completely assembled in its desired location.

Two series, aircraft and commercial, are made with 75-ST aluminum alloy or heat-treated alloy steel in the former case, 24-ST aluminum or mild steel in the latter case. Diameters range from $\frac{3}{16}$ to $\frac{3}{8}$ in. with grip length from $\frac{1}{8}$ to $1\frac{11}{16}$ inches. A range of head styles is available. The clamping action provided by the pneumatic tool will close a gap as wide as $\frac{1}{4}$ in. between the sheets prior to starting the swedging action.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 12382 If you write the maker

PRECISION MEASURING

SCHERR MICROMETERS

Drop-forged steel frame easy to read. "No Glare" graduations. Guaranteed accuracy and unsurpassed workmanship.

For greater savings in dollars and better satisfaction, use "Scherr Tools".

Complete stock. All sizes — MM. or Inch.

MAUSER VERNIER CALIPER

For inside - outside and depth measurements in 1/1000, 1/128, 1/10mm and 1/20mm.

If not available from your dealer, order direct.

WRITE FOR ILLUSTRATED CATALOG

GEORGE SCHERR CO., Inc.
COMPLETE LINE OF PRECISION INSTRUMENTS
19B-C LAFAYETTE ST. • NEW YORK 12, N. Y.

BREVITY—Identify by IEN - 12383 If you write the maker

Be fresh Stay fresh

THE RESPIRATOR THAT IS U. S. B. of M. APPROVED FOR TYPE "A" DUSTS

Guards against pneumoconiosis and silicosis producing dusts. Has over 40 sq. in. twin filter area. Sanitary face cloth. Soft rubber face mask. "Controlled-breathing" valves. Wearer has a panorama view with no blind spots. Unusual rubber, felt and plastic construction makes it extra durable, no denting or bending possible. Efficiency remains unimpaired even after rough treatment.

Sample sent **$3.00** *ppd*

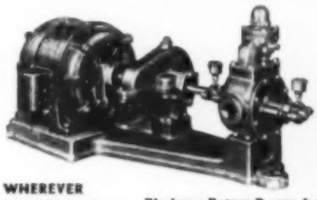
H. S. COVER
South Bend, Ind.

BREVITY—Identify by IEN - 12384 If you write the maker

IN HAND PUMPS
AS IN POWER PUMPS . . .

BLACKMER performance

SPEEDS LIQUID MATERIALS HANDLING



for POSITIVE CONTROL OF MOST LIQUIDS FROM GASOLINE TO MOLASSES

WHEREVER LIQUIDS ARE HANDLED

Blackmer Pumps enjoy preference based on performance in all types of industrial and processing plants. Learn why plant engineers prefer Blackmer.

Blackmer Rotary Pumps from 5 to 1300 GPM capacities . . . hand or power-operated . . . provide positive displacement and high suction lift with volatile or viscous liquids.

Get "FACTS" about Rotary Pumps

Write for "FACTS." Latest designs, operating and service features.

BLACKMER PUMP COMPANY
GRAND RAPIDS, MICHIGAN

BREVITY—Identify by IEN - 12385 If you write the maker

Protect Your Customers

ALLIS-CHALMERS *Electronic* Metal Detector

. . . from stray metal particles like these →

PRODUCT LIABILITY insurance protects you from obvious losses in damage suits, but doesn't protect your customer or your reputation. Precautions may lessen the problem, but rust particles, hairpins, and steel slivers still get into packaged goods somehow.

The surest way to find hidden stray metal-magnetic or non-magnetic — is with an Allis-Chalmers electronic Metal Detector on your packaging or processing line.

Complete Information

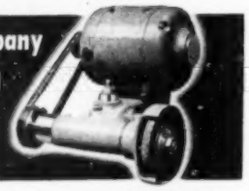
Get 20 page booklet 15B7217A. Numerous schematic sketches show ways of using the Metal Detector to protect processing machinery or insure packaged goods quality. Call your nearby Allis-Chalmers District Office, or write Allis-Chalmers, Milwaukee 1, Wisconsin. A-3393

ALLIS-CHALMERS

BREVITY—Identify by IEN - 12386 If you write the maker

Check your grinding costs against these figures!

Tool Craft Company reports amazing economies with



DUMORE TOOL-POST GRINDERS

Using simple, *lathe-mounted* Dumore set-ups, Tool Craft Co., N. Y. C., is getting high speed grinding on precision tool and die parts for *just 17.6c per hr.** In addition, Tool Craft reports big savings in tooling and set-up costs because versatile, low-cost Dumores grind ovals, flats, tapers, internal and external rounds to tolerances of .0005" with *one machine and one chucking!*

You, too, can speed work, cut costs, with Dumore precision grinders. See your Dumore Distributor for free demonstration, or write today for fact-packed bulletin.

*Cost includes power, depreciation, interest, maintenance and replacement parts on both lathe and Dumore Grinder — everything except labor.

DG-10A

The DUMORE Company
1300 17th St., RACINE, WISCONSIN
Export address: 13 E. 40th St., New York N.Y., U.S.A.

BREVITY—Identify by IEN - 12387 If you write the maker

See our CATALOG in SWEET'S FILE

Have you seen Gast Application Ideas booklet, showing 26 product problems and solutions? Sent on request.

WHAT NEXT? GAST rotary AIR MOTORS run on gas pressure to drive liquid pumps!

Alert designers are still finding new ways to exploit the unique advantages of Gast Air Motors. For example:

PROBLEM: Find explosion-proof drive for McCord Chemical Pump, used in oil fields. Electricity often not available.

SOLUTION: Gast Air Motor, driven by pressure of natural gas from field, turns 250 r.p.m. to drive liquid pump through worm gear.

RESULT: Dependable, "free" power; low motor cost.

What next? Perhaps you'll find a job that can be done *better* with Gast rotary-vane Air Motors. Remember these unique characteristics: They're compact, explosion-proof, widely variable in speed. Overloads can't burn them out! Sizes from 1/20 to 3 H.P., some reversible. Write Gast, "Air may be your Answer!"

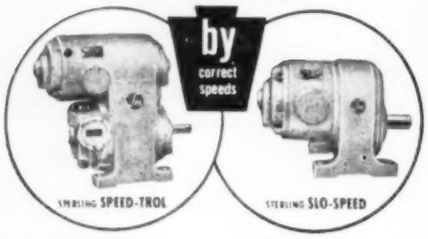
Original Equipment Manufacturers for Over 25 Years

GAST ROTARY AIR MOTORS · COMPRESSORS · VACUUM PUMPS
(TO THREE H.P.) (TO 30 LBS.) (TO 28 INCHES)
GAST MANUFACTURING CORP., 119 Hobley St., Benton Harbor, Mich.

BREVITY—Identify by IEN - 12388 If you write the maker

power modernization

conserves manpower and materials



Ask for your copy of pictorial bulletin No. D-62

showing how and where Sterling Electric Power Drives increase productivity of men and machines—control quality—eliminate waste—save space—provide versatile mounting—cost less to install and use.

STERLING ELECTRIC MOTORS

Plants: New York 51, N. Y.; Los Angeles 22, California; Hamilton, Canada; Santiago, Chile
Offices and distributors in all principal cities.

NEWS NOTES—Continued

"Follow the visitors at plant open house"

BREVITY—Identify by IEN - 12389 If you write the maker

ENGRAVING . . Booklet shows examples of tracer-control engraving and milling work

George Gorton Machine Co.
1808 Racine St., Racine, Wis.

Examples of work are illustrated and described in new 64-page booklet with the idea of suggesting possible applications in your own plant. The booklet, titled "Applications of Tracer Control", covers pantograph and duplicator machines to engrave, etch, mark, mill, profile parts such as dies, dials, molds, turbine blades, printing rolls, propeller blades.

BREVITY—Identify by IEN - 12390 If you write the maker

HEATING . . Application examples of induction heating include production figures

General Electric Co.
Dept. 6X-201, Schenectady 5, N. Y.

Bulletin GEA-4945 is a 24-page collection of application stories on electronic induction heating equipment, intended to show what can be done and to suggest possible applications in your own work. Examples include range from silver-soldering heater blades, hardening gears, heating magnet stock for hot forming, and continuous stress relieving of cable.

BREVITY—Identify by IEN - 12391 If you write the maker

LIGHTING . . Application examples of increased production through improved lighting

General Electric Co.
1 Nela Park, Cleveland 12, Ohio

Ten examples are presented in new 8-page "See Better—Work Better" bulletin on how improved industrial lighting can cut accident rates, improve production, lower reject rates. One shows a set of before-and-after pictures. You may be interested to see what has been done in other plants.

BREVITY—Identify by IEN - 12392 If you write the maker

MANAGEMENT . . Index to industrial movies lists detail reference publications available

Film Research Associates
150 E. 52nd St., New York 22, N. Y.

Seven publications and their list prices are given on a new one-sheet Order Form which will be sent you upon request. They cover such subjects as production and management methods, improving human relations, office practice. Each publication describes available films by content, type, running time, arrangement for use.

BREVITY—Identify by IEN - 12393 If you write the maker

MANAGEMENT . . Plant open house traced by pictures in company's house paper

Heald Machine Co.
1 New Bond St., Worcester 6, Mass.

Company's 125th anniversary was celebrated recently by an open house to which the community was invited. You can follow the visitors through the plant and see their reaction in a set of pictures published by the Heald Craftsman, company's house paper. The comments make interesting reading.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 12394 If you write the maker

The Sensational New CLARK Type "CY" AC MOTOR STARTER

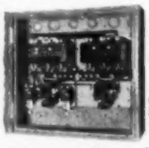
Bulletin 6013CY2 non-reversing X-line Starter.

AVAILABLE IN A WIDE VARIETY OF TYPES AND ENCLOSURES

The superior performance, low maintenance and longer life of the new CLARK Type "CY" can now be applied to almost any machine or operation requiring AC motor starting. A few of the many enclosures are shown here.

Bulletin 6018CY2 Combination Starter in Safe-Edge Cabinet.

Bulletin 6020 CY2 Starter with air circuit breaker in Safe-Edge Cabinet.



Bulletin 6050 CY2 Reversing Starter in Safe-Edge Cabinet.

Bulletin 6030 CY2 Two-Speed Starter in Safe-Edge Cabinet.

For every AC motor-starting application, the new CLARK Type "CY" means increased production and less maintenance.

Let a CLARK application engineer demonstrate the many advantages of the new Type "CY" line of AC Magnetic Starters.

THE CLARK CONTROLLER CO.
ENGINEERED ELECTRICAL CONTROL — 1146 EAST 152ND STREET, CLEVELAND 10, OHIO

BREVITY—Identify by IEN - 12395 If you write the maker

No Noise
No Vibration
No V-Belt Drives

THE SWECO SEPARATOR

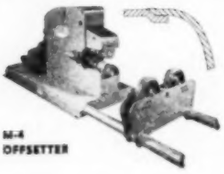
Single or multi-deck vibrating screen employing an entirely new screening motion ★ No substructure vibration ★ Greater production capacities ★ Handles wet or dry materials ★ Laboratory accurate classifying and dewatering up to 325 mesh ★ Only 3 moving parts ★ Guaranteed screen cloth life ★ Lower maintenance and power requirements.

Southwestern Engineering Company
4800 SANTA FE AVE., LOS ANGELES 58, CALIF.
SAN FRANCISCO • PORTLAND • SEATTLE • VANCOUVER
PITTSBURGH • CHICAGO • NEW YORK • ATLANTA • WASHINGTON, D.C.

BREVITY—Identify by IEN - 12396 If you write the maker

REED ENGINEERING COMPANY — MODERN METALWORKING MACHINES

1009 W. Fairview — Carthage, Mo.



BENDING ROLLS ★ WELDING POSITIONERS & ROLLS ★ OFFSET & CONTOUR FORMERS ★ ASSEMBLY FIXTURES

REED OFFSET FORMING MACHINE

★ IMPROVES AUTOMATIC WELDING PRODUCTION BY ELIMINATING CHILL-RINGS & BACKING BARS

★ FORMS OFFSET, WELD-BACKING JOGGLE FROM TANK SHELL

★ LOOSENS MILL-SCALE & RUST

★ IMPROVES SHELL ROUNDNESS, SPEEDS PIT-UP

IN TWO MODELS
M-2 — 1/16 TO 3/16 IN. PLATE
M-4 — 3/16 TO 7/16 IN. PLATE

WRITE FOR BULLETIN 73A

★ SPECIAL MACHINES & FIXTURES ★

BREVITY—Identify by IEN - 12397 If you write the maker

STOP VALVE LEAKAGE ON ANY FLOW!

WITH A DeZURIK Easy-Operating PLUG VALVE

There's a DeZURIK VALVE, featuring the exclusive RUBBER-FACED PLUG, to handle virtually any service in a leak-free, trouble-free way. Complete data or demonstration on request.

DeZURIK SHOWER CO.
SARTELL, MINNESOTA

(Made In Sheffield, England By Millspaugh, Ltd.)

BREVITY—Identify by IEN - 12398 If you write the maker

WATSON-STILLMAN HYDRAULIC POWER TOOLS

HYDRAULIC JACKS

These sturdy units, with either independent or integral pumps, are useful for many jobs in construction and maintenance. Capacities from 20 to 500 tons.

HAND PUMPS

Single and double plunger types, with reservoirs of different capacities to suit the job, these hand pumps have a wide application for operating small hydraulic tools, jacks and other hydraulic equipment, and for general hydrostatic testing purposes.

PORTABLE PIPE BENDERS

Bends all standard, extra heavy and double extra heavy steel pipe from 3/8 in. to 2 in. inclusive, as well as standard weight pipe up to 3 in. diameter. Also handles solid mild steel bars up to 2 in. diameter.

WIRE ROPE SHEARS

W-S wire, cable and bar shears provide years of trouble-free general service. They are light and portable for convenient on-the-job use.

Write for Bulletin A-5

9-L-24

Distributor Products Division
WATSON-STILLMAN
ROSELLE, NEW JERSEY

BREVITY—Identify by IEN - 12399 If you write the maker

The NEW TOWMOTOR..

industry's handling headliner!

There's good news about handling costs when Towmotor makes the headlines. Five new Towmotor models add increased versatility to every phase of handling in leading industries everywhere. *Headline features include:* Shorter wheel base; larger tires; double universal joint; extra heavy duty clutch. See complete details of the NEW Towmotor in a 15-minute film, "What Makes It Tick." Write for showing in your office.

TOWMOTOR
THE ONE-MAN-GANG

FORK LIFT TRUCKS and TRACTORS

TOWMOTOR CORPORATION, Div. 26, 1226 E. 152nd St., Cleveland 10, O.
Representatives in all principal cities in U.S. and Canada.

RECEIVING • PROCESSING • STORAGE • DISTRIBUTION

BREVITY—Identify by IEN - 12400 If you write the maker

Built for the GRIND

- No stuffing box
- No submerged bearings
- No priming problem
- No trouble

for ASH HANDLING
DRAINAGE
PUMPING ABRASIVE
or CORROSIVE
MATERIALS

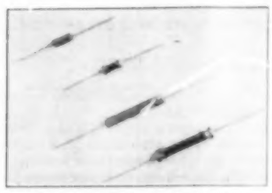
Nagle Type "SW-OB" Pumps. Sizes 1" to 8". Capacities up to 1800 g.p.m. Heads up to 100'.

Nagle Pumps, Inc.
INDUSTRIAL PUMPS FOR ABUSIVE APPLICATION
1241 Center Ave., Chicago Heights, Ill.

BREVITY—Identify by IEN - 12401 If you write the maker

RESISTOR . . Deposited carbon units particularly for electronic equipment

Source: PHAOSTRON CO.
149-53 Pasadena Ave., South Pasadena, Calif.



Ask for Carb-ohm brochure

Ratings are from 1/2 to 2 watt over a resistance range of 20 ohms to 200 megohms for this new Carb-ohm deposited carbon resistor. The units are hermetically sealed in glass or clad in a humidity-impervious casing. Available mountings include axial lead, threaded stud, tapped hole. Manufacture is under license arrangement with Western Electric Company.

BREVITY—Identify by IEN - 12402 If you write the maker

COMMUNICATING . . Mobile radio for two-way talk in a plant area

Source: MOTOROLA INC.
4543-47 W. Augusta Blvd., Chicago 51, Ill.

Action radius is single plant

New design of the company's Uni-Channel Sensicon radio equipment, previously described IEN-634-51, is available in a low-power assembly with output at approximately 1.3 watts. The new equipment meets FCC requirements for normal industrial installation to eliminate the danger of interference between one installation and another nearby operating on the same frequency.

Installation can be made as base stations, or mobile units as in application on a plant truck or other intra-plant vehicles. The transmitter-receiver units are made as a single assembly with a built-in speaker and control head or with an individual speaker and head. Operation can be specified on 6 or 12-volt dc. or 117-volt ac. in the primary power source.

BREVITY—Identify by IEN - 12403 If you write the maker

LIGHTING . . Incandescent fixture, vapor proof design, for shower rooms

Source: MULTI ELECTRIC MFG., INC.
4227 W. Lake St., Chicago 24, Ill.

To help the singing

Model 3071 is a new incandescent lighting fixture with a white porcelain-enameled canopy and a zinc-plated wire guard painted with white baking enamel. Inside the glass globe is a socket for a 150-watt lamp. The globe seats in an aluminum holder in moisture proof assembly. The fixture measures 8 1/2 in. in overall diameter by 10 1/2 in. in height. A standard package contains five units.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 12404 If you write the maker

PULLMAX DOES IT ALL!

PULLMAX
Sheet and Plate Working Machines

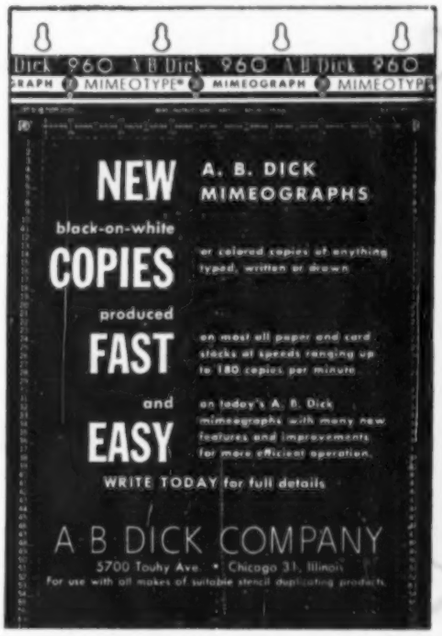
Imagine, one machine doing all of these operations—seven models that work the finest gauges up to 11/32" (in mild steel). Also ideal for working stainless, non-ferrous metal, wire mesh. Leaves a smooth perpendicular cut with no further finishing required. Pullmax does it better . . . faster.

WRITE FOR ILLUSTRATED CATALOG

AMERICAN PULLMAX CO., INC.
2631 N. Western Avenue • Chicago 47, Illinois

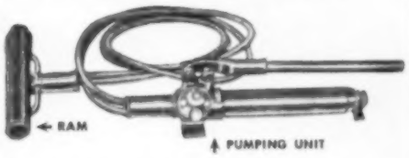
BREVITY—Identify by IEN - 12405 If you write the maker

BREVITY—Identify by IEN - 12406 If you write the maker



BREVITY—Identify by IEN - 12407 If you write the maker

Cut maintenance costs in YOUR plant . . . . .



with a HEIN-WERNER "PUSH and PULL" HYDRAULIC JACK

You can save manpower, time and money at hundreds of maintenance and production jobs with a H-W Push and Pull Hydraulic Jack. In models of 4, 10 or 20 tons capacity, these units offer direct push or pull power for moving, pressing, bending, straightening, lifting and lowering operations. Operated by remote control. Available with stand and press to give you a portable workshop. Get complete details from your H-W distributor, or write us.

Hein-Werner HYDRAULIC JACKS

HEIN-WERNER CORP.
Waukesha, Wisconsin
Also manufacturers of a complete line of hydraulic jacks in models from 1 1/2 to 100 tons capacity.

BREVITY—Identify by IEN - 12408 If you write the maker

HIGH PRESSURE REDUCING VALVE for AIR or GAS SERVICE

INLET PRESSURE UP TO 3000 PSI
OUTLET PRESSURE 10 TO 150 PSI

FISHER TYPE 1301F

TYPE 1301F is commonly used in conjunction with pilot operated controllers where high pressure operating medium is used. They are also used in general industrial applications for high pressure reduction of non-corrosive air or gas.

CONSTRUCTION:
All forged bronze construction with glass impregnated Teflon valve disc, stainless steel orifice. Furnished with one inlet connection and two outlet connections of ¼" pipe size.

PRESSURE RANGE:
Suitable for inlet pressures up to 3000 PSI, reduced pressure spring ranges of 10 to 75 PSI, 50 to 150 PSI. Adjustment screw for easy adjustment of reduced pressure setting.

FISHER GOVERNOR COMPANY
Marshalltown, Iowa

BREVITY—Identify by IEN - 12409 If you write the maker

Generalift PALLET BOXES

For large business
For small business
For all business

SEND FOR FREE BOOKLET TODAY

GENERAL BOX COMPANY..
★★★★★ engineered shipping containers

GENERAL OFFICES: 508 N. Dearborn St., Chicago 10, Ill.
DISTRICT OFFICES AND PLANTS: Cincinnati, Danville, N. J., Detroit, East St. Louis, Kansas City, Louisville, Milwaukee, Sheboygan, Winchendon.
Continental Box Company, Inc., Houston, Dallas.
General Box Company of Mississippi, Meridian, Miss.

BREVITY—Identify by IEN - 12410 If you write the maker

BRONZE?
COPPER?
Aluminum?
brass?
stainless?
MONEL?

which alloy for your fastenings?

Harper knows because Harper specializes in them ALL . . . and whether your problem is corrosion, abrasion, heat, stress, appearance or a combination of these, Harper has met it before through many years of service to all industries. Over 7,000 items . . . bolts, screws, nuts, rivets and accessories . . . in stock ready for delivery from warehouses and distributors coast to coast.

Send for new Price List and Stock Book

The H. M. Harper Co.
8211 Lehigh Ave., Morton Grove, Ill.
Rush my copy of new Price List and Stock Book.
Name.....
Address.....
City..... State.....

HARPER
EVERLASTING FASTENINGS
Specialists in ALL non-corrosive metals

NEWS NOTES—Continued

"Employee booklet stresses productivity"

BREVITY—Identify by IEN - 12411 If you write the maker

MANAGEMENT . . Booklet for employees on how machines and power improve living standards

Mercer Howard Co.
6 E. 53rd St., 6th Floor, New York 22, N. Y.

Increased productivity and its meaning to all Americans is shown by pictures and brief captions in new 48-page pocket-size booklet, "Machine Power Means Plenty". The presentation is based upon a slide film of the same name by Twentieth Century Fund, Inc. It uses a power-shovel operator as an example, stresses the part played by new equipment and methods in improving living standards. List price is 12 to 5 cents in quantity from 1 to 50,000 copies.

BREVITY—Identify by IEN - 12412 If you write the maker

NICKEL ALLOYS . . Engineering data on nickel-alloy cast iron in revised 36-page bulletin

International Nickel Co.
67 Wall St., Rm. 703, New York 5, N. Y.

"Ni-Resist" high-nickel alloy cast iron is described by booklet of the same designation as to types, composition, mechanical and physical properties, heat resistance, magnetic properties, thermal expansion, low-temperature properties. A table lists corrosion data on about 400 conditions.

BREVITY—Identify by IEN - 12413 If you write the maker

PROTECTING . . New safety poster stresses importance of eye protection

Willson Products Inc.
217 Washington St., Reading, Pa.

Two scenes, one of a hunter, the other of a blind man, are shown in new safety poster with the question, "Which dog would you rather follow?" The poster measures 12 by 10 in., is printed in two colors. It is available without charge upon request.

BREVITY—Identify by IEN - 12414 If you write the maker

STEELS . . Useful information on vanadium-content alloy steels and irons

Vanadium Corp. of America
420 Lexington Ave., Room 2701, New York 17, N. Y.

"Vanadium Data Sheets," titles 80-page spiral-bound book that assembles information in tabular form on 180 compositions of vanadium irons and steels. It carries a 1950 copyright date but has been made available only recently. It will be sent without charge to qualified persons whose requests are received upon company letterhead. Information includes composition, heat treatment, mechanical properties, typical uses. There is a detailed index of applications and compositions.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 12415 If you write the maker

WEIGER-WEED WW KAPTRODE ELECTRODES

Copper Savings—75% and more with widespread, careful use.

Electrode Cost Savings—20% and up in ordinary shop operations; careful operators save as high as 50%.

Inventory Savings—30% and up; only small supply of shanks needed; electrodes are interchangeable; one shank outlasts ten or more tips.

Time Savings—electrodes quickly, easily inserted and removed.

For the toughest electrode-consuming job in your plant, order a supply of WW—Kaptrode Electrodes NOW!

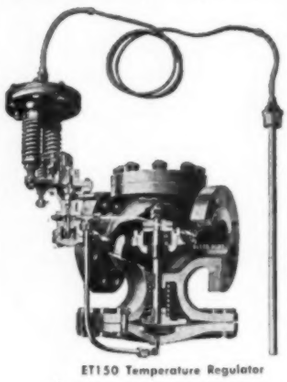
For full information, ask for *Bulletin 14.100.*

Weiger-Weed & Company, Division of Fansteel Metallurgical Corporation, 11644 Cloverdale Avenue, Detroit 4, Michigan.

WEIGER-WEED
Resistance Welding ELECTRODES
DIES • TIPS • WHEELS • HOLDERS

BREVITY—Identify by IEN - 12416 If you write the maker

LOW COST Temperature Control



ET150 Temperature Regulator

Tops in performance for both storage and instantaneous heaters, this pilot-operated Spence regulator offers these important advantages:

SECO Metal Seats and Discs — 20 years experience has failed to produce a single case where SECO Metal has been cut by steam.

Packless Construction — minimizes friction . . . eliminates much time-consuming maintenance.

Large Metal Diaphragm—under usual conditions never requires replacement.

New bulletin gives complete data on the entire line of Spence regulators. They are made in sizes from ¼" to 12" for service with air, steam, water, oil or gas. Write for your free copy of Bulletin 500 today.

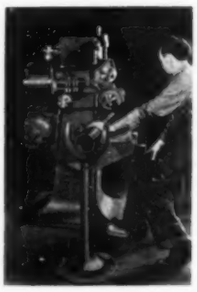
SE-106

Spence
SPENCE ENGINEERING COMPANY, INC.
WALDEN, NEW YORK

BREVITY—Identify by IEN - 12417 If you write the maker

STEEN PIPE AND TUBE CUT-OFF MACHINES

For faster Cutting . . .

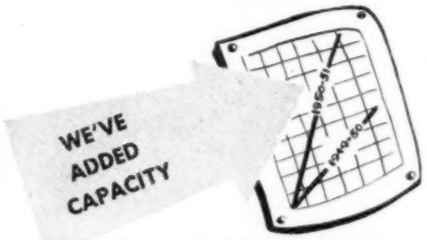


If you cut pipes and tubes . . . in small or large quantities . . . you can cut faster —easier—with a Steen Cut-Off Machine. Available in hand and automatic air-operated models for pipes and tubes up to 12" diam. *Also, Manufacturers of Cut-Off Wheels . . . Chaser and Wheel Grinders.*

Request Circulars Today

Continental MACHINE CO.
SINCE 1919
1952 N. MAUD AVE. • CHICAGO 14, ILL.

BREVITY—Identify by IEN - 12418 If you write the maker



TO HANDLE YOUR EXPANDED CIVILIAN AND WAR NEEDS

FOR SCREENS, STRAINERS, FILTERS

Production space has been increased by 100% and new modern equipment added giving new high standards in performance. Included in new equipment are special production machines that are particularly suited to do crimping and brazing required in strainers used in defense work. Storage space has been enlarged permitting handling of WIDER RANGES of monel and brass wire cloth and perforated metal. Send us your specifications for a speedy quote. Write for FREE Literature.

PITTSFIELD PRODUCTS, Inc.
ANN ARBOR, MICHIGAN

▼ BREVITY—Identify by IEN - 12419 If you write the maker ▼

"We use only SKIL Drills, heavy duty, durable, yet compact, easy to handle!"

says R. O. ABSHER, production manager of the AERO DESIGN AND ENGINEERING COMPANY, Oklahoma City, Okla.

"Only SKIL measures up to our precision requirements," says Mr. Absher. "We have 75 Model 45 SKIL Drills in constant operation in every stage of aircraft manufacture." He adds, "And SKIL's local repair service insures top performance."

See your SKIL Distributor for Complete Information

SKIL Products are made only by SKILSAW, Inc. 5033 Elston Ave., Chicago 30, Ill.
SKILSAW Factory Branch Offices in 34 principal cities
In Canada: Skiltools, Ltd. 3601 Dundas Street West, Toronto 9, Ont.

SKIL PORTABLE TOOLS

▼ BREVITY—Identify by IEN - 12420 If you write the maker ▼

we've built a GIANT

. . . to produce high vacuum in bigger chambers—at less cost—than ever before

SAY you're producing one of the modern metals that has wonderful properties but can't stand oxygen at high temperatures. Or maybe your problem is a large wind tunnel, a synchro-cyclotron, or a vacuum dehydration chamber for biologicals.

You want to push out into the atmosphere as much air or gas as possible at the lowest cost. You may need to exhaust down to 1/2000th of atmospheric pressure or as low as 1/75,000th of an atmosphere.

DPi now supplies a series of non-mechanical pumps which can operate in this pressure range at rates well over 10,000 cubic feet per minute, compressing air and gas to the point where mechanical pumping becomes highly efficient—to pressures as high as 10 mm Hg where needed.

If you will tell us your vacuum pumping requirements, we'll be glad to show you how these unique oil ejector pumps make possible a new order of operating economy for large high vacuum systems. Write *Distillation Products Industries,* Vacuum Equipment Department, 761 Ridge Road West, Rochester 3, N. Y. (Division of Eastman Kodak Company).

DPi

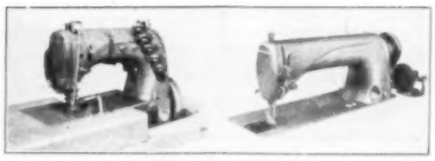
high vacuum research and engineering

Also . . . vitamins A and E . . . distilled monoglycerides . . . more than 3400 Eastman Organic Chemicals for science and industry

▼ BREVITY—Identify by IEN - 12422 If you write the maker ▼

SEWING . . Multi-needle machine and lockstitch unit for production use

Source: UNION SPECIAL MACHINE CO. 443-47 N. Franklin St., Chicago 10, Ill.



Production line equipment

Style 52900 BA is a new three-needle machine producing the company's Safety Stitch, seam Type SSa-2, with a stitch range of 9 to 14 per inch. It supersedes a previously-developed similar machine and is designed for simultaneous sewing and over edging of garment pockets and similar articles. The design features automatic lubrication, improved looper-throwout mechanism, new seize-resistant main bearings, and anti-friction bearings in the feed lift, looper avoid and feed drive. The housing is finished in a neutral taupe color, smooth and easy to keep clean.

Class 61400 designates new lockstitch machine. It features needle bearings to minimize the rotary hook and cloth-plate temperatures. It provides a stitch-length indicator of the comparison type that can be viewed through a slot in the cloth plate. Two styles of this machine are for light to medium and for somewhat heavier work. The feed mechanism produces a smooth symmetrical curve to assure even feeding and flat seams. Light material can be handled without feed marks or cutting. This machine also is finished in neutral taupe color.

▼ BREVITY—Identify by IEN - 12423 If you write the maker ▼

LIGHTING . . Emergency unit switches to battery on circuit failure

Source: ELECTRIC STORAGE BATTERY CO. 40-44 S. 15th St., Philadelphia 2, Pa.

For essential light

One or two 25-watt sealed-beam floodlights are assembled on a steel housing that encloses a storage battery and relay operated circuit switch in this new unit. The assembly connects into a normal lighting circuit. In the event of circuit failure the switch changes over for battery operation. Lightguard is the trade name.

The relay returns operation to the normal circuit when power service is restored and closes the circuit also to a charging unit, which is part of the assembly, to keep the storage battery charged. A handle on the housing permits use of the light in portable service. Disconnecting the extension cord plug from the lighting circuit serves as a test for the battery and the lamp.

A single-lamp unit will operate continuously for 6 hours. The two-lamp assembly has an operating life of 2¼ hr. when the light output will be about 70 per cent of peak. Housing dimensions are 13 by 7 by 11 inches. Weight with one lamp is 44 lb. and with two lamps is 46 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 12424 If you write the maker ▼

Heat Where You Need It... QUIETLY with

DUNHAM UNIT HEATERS

You're looking into Dunham's new Vertical Discharge Unit Heater—designed to throw heat *exactly* where needed, while maintaining perfect balance between air volume and final air temperatures.

Note the sturdy motor support cone that directs air from heating element to fan and protects motor from excessive heat and dust; the resilient motor mountings that minimize noise and vibration.

Dunham's improved header design assures uniform steam distribution, eliminates air pockets. For complete information, WRITE FOR BULLETIN 1301-11.

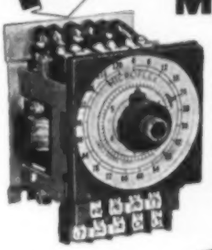
DUNHAM

C. A. Dunham Co. 400 W. Madison St., Chicago 6, Ill.
In Canada: C. A. Dunham Co. Ltd., Toronto
In England: C. A. Dunham Co. Ltd., London

HEATING SYSTEMS AND EQUIPMENT

▼ BREVITY—Identify by IEN - 12425 If you write the maker ▼

MICROFLEX RESET TIMER



The MICROFLEX is a precision Timer, designed with a choice of over 100 Timer operating combinations to fit your industrial process. Large easy-to-read dial with Micrometer type knob for accurate, fast settings. Precision built for continuous precise operation.

Write for Bulletin 110!

AN EAGLE TIMER FOR EVERY TIMING PROBLEM!

Export Agent: 13 East 40th St., New York 16, N. Y.

EAGLE SIGNAL Industrial Timers
EAGLE SIGNAL CORPORATION MOLINE, ILL.

▼ BREVITY—Identify by IEN - 12426 If you write the maker ▼

STOP TRANSMITTING DISEASE GERMS

INSTALL FOOT-CONTROLLED BRADLEY WASHFOUNTAINS

In a recent issue of the medical journal, Lancet, an article treats on transmission of disease germs, possibly polio, from different persons touching handles to flush toilets. The doctor's suggestion was that *foot pedals* be developed for the purpose.

Bradley, in developing sanitary wash fixtures, recognized this preventive factor. The *foot-control* found on Bradley Washfountains eliminates the possibility of transmitting disease germs. That is why Bradleys have become the standard in factories, mills, institutions, schools.

BRADLEY WASHFOUNTAIN CO., 2219 W. Michigan St., Milwaukee 1, Wis.

BRADLEY washfountains

Helpful illustrated Catalog 4701 mailed promptly on request.

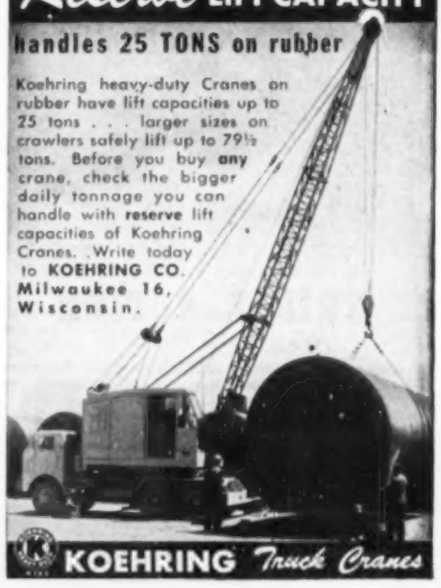
Distributed through Plumbing Wholesalers

▼ BREVITY—Identify by IEN - 12427 If you write the maker ▼

Reserve LIFT CAPACITY

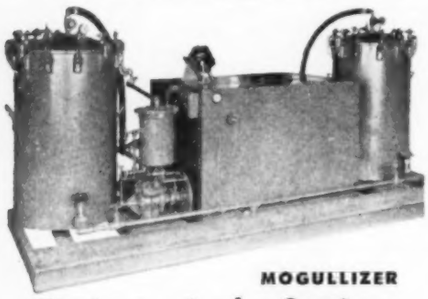
handles 25 TONS on rubber

Koehring heavy-duty Cranes on rubber have lift capacities up to 25 tons . . . larger sizes on crawlers safely lift up to 79½ tons. Before you buy **any** crane, check the bigger daily tonnage you can handle with **reserve** lift capacities of Koehring Cranes. Write today to **KOEHRING CO. Milwaukee 16, Wisconsin.**



KOEHRING *Truck Cranes*

BREVITY—Identify by IEN - 12428 If you write the maker



MOGULLIZER

Eliminates Leaky Castings

If your contract calls for impregnation, or if your production castings leak or weep and will not hold pressure, investigate our Mogullizing system—a high vacuum and pressure method of sealing castings. Models to meet your requirements.

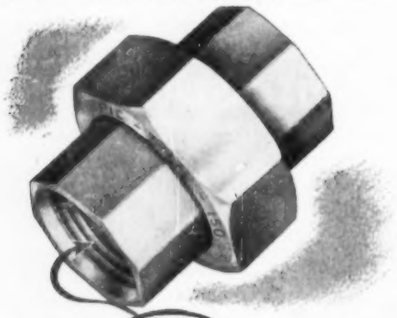
Any standard impregnating material can be used but for top efficiency we recommend our Mogul Cast Seal.

Prompt deliveries.

Write today for full details on the Mogullizing system.

METALLIZING COMPANY OF AMERICA
3520 W. Carroll Avenue • Chicago 24, Ill.

BREVITY—Identify by IEN - 12429 If you write the maker



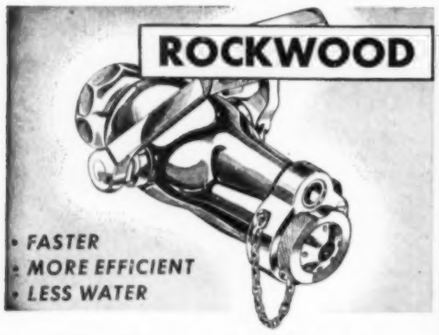
Even the threads are zinc-plated!

PIC STEEL UNIONS

You can't cut corners in rust protection. That's why Pics are *100%* zinc plated. This 150 lb. steel union also *helps*, not *hurts* the looks of new equipment — it's attractive and bright. Ends are uniformly flat sided of heavy steel pipe coupling stock. They can take rugged wrenching and installation can be made in tight places or elsewhere with open end wrenches. Most important, a special wedge-type bronze seat affords the secure tightness a quality union should provide. Pics cost less than galvanized, no more than black malleable unions. Try them — write for FREE SAMPLES!

DART UNION COMPANY
130 THURBERS AVENUE, PROVIDENCE 5, R. I.

BREVITY—Identify by IEN - 12430 If you write the maker



TRIPLE-ACTION
WaterFOG Nozzles

Rockwood *LIGHTweight* triple-action type SG-4B WaterFOG Nozzles are truly an all-purpose fire fighting tool for controlling and putting out fires in ordinary combustibles and flammable liquids. They use ordinary water and will discharge: 1. High velocity WaterFOG, 2. Straight water stream, 3. Low velocity WaterFOG from extension applicator. Protects operator from fumes and heat. Available in ¾" — 1" — 1½" — 2½" pipe sizes. Operates efficiently at 100 p.s.i. at the nozzle. Write for Bulletin C-501 R.

Approved by Underwriters' Laboratories, Inc. and Factory Mutual Laboratories.

ROCKWOOD SPRINKLER COMPANY
40 HARLOW ST. WORCESTER 5, MASS.

NEWS NOTES—Concluded
"Heat treating data on tool steels"

BREVITY—Identify by IEN - 12431 If you write the maker

STEELS . . Cardboard slide selector give heat treating information on 13 tool steels

Carpenter Steel Co.
351 W. Bern St., Reading, Pa.

Analyses, forging and normalizing temperatures, annealing and hardening treatments, recommended drawing range, can be read on the face of new 11 by 5-in. selector, "Guide to Simplified Heat Treating". On the back can be read effect of drawing temperature on hardness from 200 to 1,300 deg. F. for the same 13 steels as on the face.

BREVITY—Identify by IEN - 12432 If you write the maker

STORING . . Cardboard slide selector reads load rating of sectional steel framing

Unistrut Products Co.
1011-15 W. Washington Blvd., Chicago 7, Ill.

"Beam Load Selector" is offered on request to assist in determining the weight that can be supported by the company's steel channel which assembles into racks, frames, supports. A window at the front of the 6¼ by 3-in. selector reads uniform load and maximum deflection for 12 types on spans from 12 to 120 inches. You can calculate column load for 12 to 120-in. unbraced height on the reverse side.

BREVITY—Identify by IEN - 12433 If you write the maker

TRAPS . . How to apply them to unit heaters described in 16-page booklet

Armstrong Machine Works
888 Maple St., Three Rivers, Mich.

Vol. 20 No. 5 of the company's Trap Magazine is devoted entirely to the subject, "How to Trap Unit Heaters". It describes trap selection by BTU and condensate methods, selection for heaters operated at constant and variable pressures, manufacturer's BTU output ratings for 30 makes of heaters, installation practice, data on the company's traps.

BREVITY—Identify by IEN - 12434 If you write the maker

TUMBLING . . Operating suggestions in house publication on surface finishing by tumbling

Norton Co.
36 New Bond St., Worcester 6, Mass.

Third article in a series appears in the current issue of "Grits and Grinds", company's house publication. It is arranged as a series of suggestions to operating personnel on selecting abrasive size in barrel finishing, screening, barrel loading, speeds, masking, cleaners, unloading, drying, barrel care. Ask for Vol. 42 No. 9 when you write.

BREVITY—Identify by IEN - 12435 If you write the maker

WELDING . . Pocket information book on welding electrodes and how to use them

Hobart Brothers Co.
Box EW-161-SA, Troy, Ohio

Types of welded joints, typical positions, welding troubles and remedies, average electrode consumption tables, standard steel shapes available for welding, are among the information in new 40-page "Hobart Welding Electrodes and Welder's Vest Pocket Guide" along with application data.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 12436 If you write the maker

BREVITY—Identify by IEN - 12437 If you write the maker

AUTOMATIC METERING *pays off!*

Wherever liquids feed into processes, these new batching meters save ingredients, hit formulas "on the nose," eliminate unsanitary conditions, and provide accurate cost figures. Save time, too! Simply push buttons to set the meter, open the valve, and the Auto-Stop cuts off at exactly the right quantity. No more gauge sticks, batch tanks or buckets. Auto-Stop sizes 1", 1½" and 2" for water, syrups, oils, and other liquids. Ask for facts—just telephone Neptune office nearest you.

NEPTUNE METER CO. • 50 WEST 50th STREET • NEW YORK 20
Atlanta • Boston • Chicago • Dallas • Denver • No. Kansas City
Louisville • Los Angeles • Philadelphia • Portland • San Francisco

BREVITY—Identify by IEN - 12438 If you write the maker

Commercial's

NEW CATALOG on HYDRAULIC PUMPS and MOTORS

Now Ready for you on Request

THE COMMERCIAL SHEARING AND STAMPING CO.
P. O. BOX 719 YOUNGSTOWN 1, OHIO

BREVITY—Identify by IEN - 12439 If you write the maker

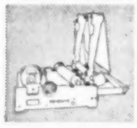
Better Coating at Lower Cost with

POTDEVIN

Coating Machines

Manufacturers in every field have been depending on their "POTDEVINS" to cut down operating costs.

Illustrated is Model 2R for applying any type coating to any kind of material.



There is a POTDEVIN coating machine for every job . . . from a 6-inch hand-operated model for small work to a giant 46-inch semi-automatic for mass production. Such coating materials as hot or cold glues, latex, resins, paint, varnish and lacquer, as well as many of the new type coating materials, work with equal ease . . . and the amount of coating is accurately controlled. Write POTDEVIN today for full particulars and discover how easy your coating problem can be solved with a "POTDEVIN" machine. And you don't need skilled help to operate a POTDEVIN.

POTDEVIN MACHINE CO.
1213 38th St., Brooklyn 18, N. Y.

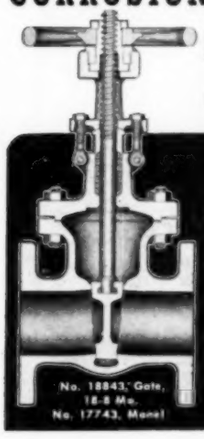
Designers and manufacturers since 1893 of equipment for Bag Making, Printing, Coating, Gluing and Labeling.

▼ BREVITY—Identify by IEN - 12440 If you write the maker ▼

▼ BREVITY—Identify by IEN - 12441 If you write the maker ▼

BUYER'S CHOICE IN CORROSION-RESISTANT ALLOY VALVES

CRANE



GATES, GLOBES, CHECKS, AND PLUG GATES—IN 18-8 MO ALLOY STEEL OR MONEL

WORKING PRESSURES
150 pounds liquid or gas
500 deg. F. max. temp.

For widest choice of corrosive service valves, see this dual Crane line. Includes gates, globes, plug gates, and checks. In each valve, all parts in contact with flow are finest quality Crane 18-8 Mo or Monel—the most widely effective corrosion-resistant alloys. Complete suitability for your needs assured by Crane Quality design in every detail.

PRESSURE-TIGHT STEM SEAL—unusually deep stuffing box assures tightness at stem; two-piece bolted gland equalizes pressure on packing, prevents stem binding.

ACCURATE SEATING—fully guided disc on Gate Valves cannot jam or get out of line. Free swivel disc-stem connection on Globe Valves helps to seat disc accurately and tightly upon narrow line bearing 35° taper seating surface.

EXTRA-TIGHT BONNET JOINT—male and female bolted bonnet joint fully retains gasket, minimizes danger of leakage.

SEND FOR CIRCULAR AD-1855—or ask your Crane Representative—for complete information about Crane Alloy Gates and Globes; Checks—in Straight-way and Y-Patterns; also Plug Gates, highly suited both for throttling and unrestricted flow service.

CRANE CO.

General Offices: 836 S. Michigan Avenue, Chicago 5, Ill.
Branches and Wholesalers Serving All Industrial Areas
VALVES • FITTINGS • PIPE • PLUMBING • HEATING

▼ BREVITY—Identify by IEN - 12443 If you write the maker ▼

SOLENOID . . Push type assembly, leather faced to cushion spring return

Source: NATIONAL ACME CO.
172 E. 131st St., Cleveland 8, Ohio

No noise

Saddle Stop Type 3K-300 is new design of the company's push-type solenoid for application where a severe return blow, due to operating by a spring load, results in plunger impact on the return movement. The new design applies a leather-faced saddle that cushions this action and also silences it.

The solenoid is available in strokes from ¼ to 1½ in. for capacity between 2½ and 14 pounds. It can be supplied to operate on ac. or dc., to mount on the base or side in standard or special construction. It retains the original Stellite-Weld bonding of laminations at the side and point of impact.

▼ BREVITY—Identify by IEN - 12444 If you write the maker ▼

HEAT TREATING . . Chemicals decompose to furnace atmosphere

Source: MARLYN CHEMICAL CO.
Forsythe Ave. & 156th, Calumet City, Ill.

Non-toxic and non-inflammable

Atmosand No. 6 and Atmosol No. 19 are respectively granular and liquid chemicals, now available to produce furnace atmospheres suitable for heat treating, brazing, silver soldering. Both materials decompose in the presence of heat to produce a gas consisting of approximately 35 per cent hydrogen, 20 per cent carbon monoxide and the balance nitrogen.

One ounce of Atmosand will liberate about 1⅓ cu. ft. of the gas. One gallon of Atmosol will produce approximately 350 cubic feet. Packaging for the granular material is in units of 10 to 1,000 lb. at a list price of 16 to 12 cents per pound. The liquid is packaged in 1, 5 and 55-gal. containers at a list price of $2 to $1 per gallon.

▼ BREVITY—Identify by IEN - 12445 If you write the maker ▼

STORING . . Bracket equipped shelf takes standard jars to hold small parts

Source: STELLO PRODUCTS CORP.
706 S. Main, Hutchinson, Kansas

Jar Holder Shelf is a new steel storage unit measuring 14½ in. in length by 3½ in. in width. It is equipped with four brackets to take ½-pt., 1-pt., or quart jars to hold small parts. The shelf can be mounted against a wall, or between supports, to hold the jars where the parts can be seen and reached. List price is $1 without the jars.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 12446 If you write the maker ▼

LOWER MILLING COSTS!

Kent-Owens builds 'em *rugged . . . simple . . .* and *versatile . . .* machines adaptable to countless milling jobs. Designed for rapid, easy set-up and cost-saving operation. Extra rigid head mounting assures balanced load. Greater cutting efficiency with smooth, powerful cutter drive—only two gear contacts, motor to cutter. Write for bulletins on wide range of hydraulic and hand-operated machines. Kent-Owens Machines Co., Toledo, Ohio.

KENT-OWENS
Milling Machines

▼ BREVITY—Identify by IEN - 12447 If you write the maker ▼

Where You Get Greatest Air Economy

using "Buffalo" AXIAL FLOW FANS

Where space is short, where you can mount the fan in STRAIGHT ductwork, where you need light-duty ventilation, exhaust or air conditioning supply—be sure to look into "Buffalo" Axial Flow Fans. Their light weight, their compact design, their beeline air delivery, their non-overloading feature—make them ideal, efficient fans for your job. Thousands in use throughout Industry. WRITE FOR BULLETIN 5553-C.

BUFFALO FORGE COMPANY
496 Broadway Buffalo, N. Y.
Canadian Blower & Forge Co., Ltd., Kitchener, Ont.
Sales Representatives in all Principal Cities.

"Buffalo" **AXIAL FLOW FANS**
"Air travels the Bee-Line Route"

▼ BREVITY—Identify by IEN - 12448 If you write the maker ▼

Speeds sanding of metal surfaces preparatory to priming and final finish

Speed the removal of burrs, grinder marks, and other defects in metal surfaces before priming . . . then sand primer coat to a smooth, level surface before final finish. Sundstrand Air Sanders with *Straight-Line Action* are available in single or double pad models, for wet or dry sanding on flat or curved surfaces, to handle almost any sanding operation on wood, metal, or plastics. See your local distributor or write us today for Bulletin IE-12.

SUNDSTRAND

SUNDSTRAND AIR SANDERS
SUNDSTRAND MACHINE TOOL CO.
PNEUMATIC DIVISION, ROCKFORD, ILLINOIS

▼ BREVITY—Identify by IEN - 12449 If you write the maker ▼

Commemorating our 60th Anniversary
THE POWERS REGULATOR COMPANY

New Factory and General Office Building: 3400 Oakton Street, Skokie, Ill.

World's Most Modern Factory Producing Automatic Temperature and Humidity Control

. . . to meet the greatly increased demand for Powers products and to give you better controls, better deliveries and better values . . . these advantages are possible with our large new plant and modern production facilities. With an enlarged engineering and production staff, plus 60 years experience in heating, ventilating, air conditioning and process control, we believe we can be of greater service than ever before to our many friends who have contributed to our success

WILLIAM PENN POWERS
. . with his invention of the first all pneumatic system of temperature control and gradual acting vapor disc thermostat made an invaluable contribution to the modern science of heating, air conditioning and industrial process control.

POWERS CONTROL 60th

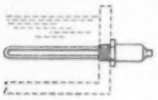
Offices in Over 50 Cities. See Your Phone Book.

BREVITY—Identify by IEN - 12450 If you write the maker

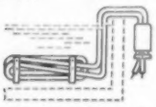
LOW-COST, EFFICIENT

liquid heating

with G-E Calrod* Heaters



G-E Calrod heaters are available in a wide range of sizes, shapes, ratings and sheath materials for "screw-in" . . .



or "over-the-side" installation. Thermostatic control will assure you of accurate temperatures and minimum power consumption.

Water, oils, plating baths, degreasing solutions and many other liquids do a more efficient job when accurately heated. And one of the fastest, most accurate and efficient methods of heating liquids is with G-E Calrod immersion heaters . . . by putting the heater *right in the liquid* for maximum heat transfer with minimum heat losses!

FREE BULLETINS, GEC-1005A—"Electric Heaters and Heating Devices" and GEA-5077, "Heating Liquids With Electric Heaters" will help you select and apply the heaters best suited to your jobs. Write to *Apparatus Dept., Sec. 720-16, General Electric Co., Schenectady 5, N. Y.*

*Reg. U. S. Pat. Off.

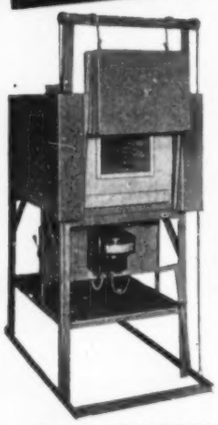
GENERAL ELECTRIC

720-36

BREVITY—Identify by IEN - 12451 If you write the maker

"MULTI-INSULATION" is the secret of . . .

HUPPERT Floor Model FURNACE



This sturdy, production-type Huppert Furnace not only attains highest-level efficiency, but cuts operating costs to a minimum through unique Huppert method of multi-insulation surrounding all sides of the work chamber. This furnace provides a versatile heat range — continuous up to 1850°F., intermittent to 1950°F. Also built for 2300°F. for special applications.

Automatic Temperature Control featured. Also tight-seating, wedge-type door and convenient shelf.

220 V. AC, single or 3-phase operation (110 V. or 440 V. models to order).

This model built in 20 different sizes.

Model No. 16 illustrated, 12" x 8" x 18"—$925.00 complete.

K. H. HUPPERT COMPANY

6856 COTTAGE GROVE AVENUE CHICAGO 37, ILLINOIS

▼ Manufacturers of Electric Furnaces & Ovens ▼

BREVITY—Identify by IEN - 12452 If you write the maker

TEMPILSTIKS°

the amazing Crayons that tell temperatures

in WELDING, FLAME-CUTTING, TEMPERING, FORGING, CASTING, MOLDING, DRAWING, STRAIGHTENING, HEAT-TREATING IN GENERAL

$2 each

gives up to 2000 readings

it's this simple:

- Select the Tempilstik for your working temperature.
- Mark your workpiece with it.
- The Tempilstik will leave a liquid mark as soon as its specified temperature is reached.

Available in these temperatures (°F)						
113	212	312	450	850	1250	1650
125	225	325	500	900	1300	1700
138	238	338	550	950	1350	1750
150	250	350	600	1000	1400	1800
163	263	363	650	1050	1450	1850
175	275	375	700	1100	1500	1900
188	288	388	750	1150	1550	1950
200	300	400	800	1200	1600	2000

Also available in pellet and liquid form.

TEMPIL CORPORATION
132 W. 22nd St., New York 11, N. Y.

FREE—Tempil "Basic Guide to Ferrous Metallurgy" —16½" by 21" plastic-laminated wall chart in color. Send for sample pellets, stating temperature of interest to you.

NAME _____

COMPANY _____

ADDRESS _____

BREVITY—Identify by IEN - 12453 If you write the maker

EXTINGUISHING . . Hand liquid unit is air pressurized, 1 to 4 quarts

Source: STOP-FIRE INC.
123-27 Ashland Place, Dept. IEN, Brooklyn 1, N. Y.

Stopping a magnesium chip fire

Vaporizing liquid, such as carbon tetrachloride or chlorobromomethane, is directed at a fire by air pressure in the housing of this new extinguisher when a release lever is pressed. The unit is available in 1, 2½ and 4-qt. sizes. It can be supplied with a mounting bracket for installation at a machine or other industrial equipment where there is danger of fire.

The assembly includes a removable head to assist in inspection, cleaning or adjustment. The nozzle is non-clogging design. Joints are silver soldered and sealed with Teflon gaskets. A flexible siphon tube permits discharge at any angle from the brass shell. Range is about 30 feet. Discharge interval is 27 seconds at 70 deg. F. for the 1-qt. size.

The extinguisher is approved by Underwriters' Laboratories. Pressure is built up by connection to a shop air line at the input fitting beside the pressure gage in the operating head.

BREVITY—Identify by IEN - 12454 If you write the maker

DRILLING . . Portable electric tool in four sizes, ½ to ⅞ in. in steel

Source: MILWAUKEE ELECTRIC TOOL CORP.
5314-18 W. State St., Milwaukee 8, Wis.

$59.50 to $89.50

Universal motor drives helical gears in a double reduction assembly between the motor and the spindle in ½ and ⅝-in. sizes, triple reduction in ¾ and ⅞-in. sizes in the company's new Super Hole-Shooter line of portable electric drills. Shafts are mounted on factory-lubricated and sealed ball and roller bearings. A multi-blade fan drives cooling air over the motor. The drill can be equipped with a 3-jaw geared-type key chuck or with a Morse taper socket. Operation is on 110-volt ac. or dc. in standard construction, 32 to 250 volts at added cost.

Operation is at 600 to 350 rpm. in free rotation, 360 to 235 rpm. under full load. Overall length is 16 to 18 inches. Weight of the new tool is 14¾ to 15¼ pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 60

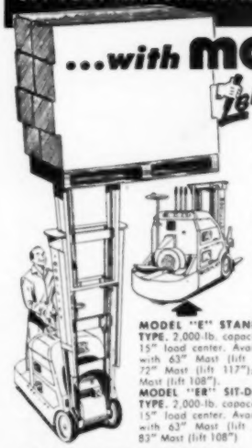
BREVITY—Identify by IEN - 12455 If you write the maker

Cut Your Materials Handling Costs

. . . with MOBILIFT

Lev-R-Matic DRIVE

Fork Lift Trucks



Mobilift gas operated fork trucks are compactly designed for split second maneuverability everywhere.

3 functionally grouped levers give operator finger-tip control of tilting, elevating, forward-back movement.

Push-Pull Lev-R-Matic controls and a multiple disc clutch smoothly transmit power forward and back. There are NO GEARS TO SHIFT.

Roller chain-driven uprights allow unobstructed view between uprights.

MODEL "E" STAND-UP TYPE. 2,000-lb. capacity on 15" load center. Available with 63" Mast (lift 65"); 72" Mast (lift 117"); 83" Mast (lift 108").

MODEL "SR" SIT-DOWN TYPE. 2,000-lb. capacity on 15" load center. Available with 63" Mast (lift 68"); 83" Mast (lift 108")

"MOBILIZE" Your Materials Handling . . . Write for Specification Bulletins

MOBILIFT Lev-R-Matic DRIVE

MOBILIFT CORPORATION

835 S. E. Main St., Portland 14, Oregon

CHICAGO • EAST RUTHERFORD, N. J. • ATLANTA • DALLAS • BERKELEY

BREVITY—Identify by IEN - 12456 If you write the maker

QUALITY + SERVICE

2 GOOD REASONS TO STANDARDIZE ON

MAUREY FHP V-DRIVES

Maurey V-Drive quality means lasting, low cost, trouble-free performance plus prompt delivery from complete stocks. Maurey Hi-Q single and two-groove and variable pitch V-Pulleys of Pressed Steel and Cast Iron come in 1736 different sizes for any FHP speed ratio or standard shaft. Maurey MOR-GRIP long-life V-Belts meet all FHP drive needs. In addition, Maurey builds special V-Drives to meet special requirements. Investigate the Maurey combination of Quality, Service and Low Cost, and see why leading manufacturers have standardized on Maurey V-Drives.

Immediate Delivery from complete stock at better Distributors.

Write today for Bulletins describing
Maurey FHP V-Belts — Bulletin FHP-101
Hi-Q Cast Iron V-Pulleys and
Hi-Q Pressed Steel V-Pulleys — Bulletin OEM-2000

MAUREY MANUFACTURING CORP.

World's largest manufacturer of pressed steel and cast iron FHP V-Pulleys . . . serving industry since 1917

2916 South Wabash Avenue • Chicago 16, Illinois

BREVITY—Identify by IEN - 12457 If you write the maker

NEED BAND TOOLS?

INCREASED PRODUCTION MAKES DoALL BAND TOOLS AVAILABLE NOW!

All Types and sizes to cut any material NOW READILY AVAILABLE . . .

NO band tool shortage at DoALL. Choose from the world's most complete line of precision made, longer lived bands for precision sawing, filing, grinding, polishing, honing, friction sawing and cutting of all types of ferrous, non-ferrous metals, plastics, rubber, leather, paper and other non-metallics.

DoALL bands are packaged in the exclusive DoALL "strip out" container for safety, convenience and blade protection. They are available in a wide selection of lengths, widths and pitch to handle any job, any material. Remember, any band sawing machine performs at top efficiency with DoALL saw bands.

Call your local DoALL Sales-Service Store today for immediate delivery on any DoALL band tool. Write for literature.

DoALL BAND MACHINING

Ask about the benefits of DoALL Contour-Matic Band Machining and how it can help you. Learn how this time, money and material saving machine cuts any material to any profile—gives faster, better production

SB-32 **THE DoALL COMPANY**
254 North Laurel Avenue
Des Plaines, Illinois

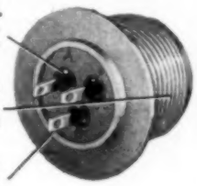
Machine Tools . . . Gaging Equipment

. . . Tool Steel . . . Band Tools . . . Metal Working Supplies

BREVITY—Identify by IEN - 12459 If you write the maker

CANNON PLUGS *hermetically sealed*

Cannon Type "GS" (glass sealed) connectors are hermetically sealed for use on position indicators, tachometers, and other instruments that must be sealed to avoid moisture condensation resulting from sudden altitude change or other causes.



Glass beads fused to shell and contact, have approximately same coefficient of expansion as steel shell, insulate contact and provide perfect seal.

Shell machined from cold rolled steel. Hot tin dip is standard finish. GS02 is receptacle type; GS06 plug with coupling nut.

Contacts machined from cold rolled steel. Flat eyelet at wire end is standard. Solder cup type contact available on special order.

Request Bulletin No. GS-2 for engineering data.

CANNON ELECTRIC

3209 Humboldt Street, Los Angeles 31, California. Canadian factory: Toronto, Ontario. World export: Frazar & Hansen, San Francisco, New York and Los Angeles.

BREVITY—Identify by IEN - 12460 If you write the maker

TRUCKS AND TRAILERS MOVE FASTER, EASIER ON NEW WHEELS BY *ELECTRIC*

Modernize baggage-trucks, industrial trailers, floor trucks, mail carts and other portable equipment with new ELECTRIC wheels **for faster, easier handling.** There is an ELECTRIC wheel for every job.

Our 65 years of engineering "know-how" assures you of top performance from ELECTRIC equipment.

ELECTRIC wheels are furnished with or without roller bearings to fit your own axles or complete with axles—steel tires, molded-on-tires, or pneumatic tires. All types are available in a full range of sizes.

Our experienced engineers are always at your service.

WRITE FOR COMPLETE INFORMATION

ELECTRIC WHEEL CO.

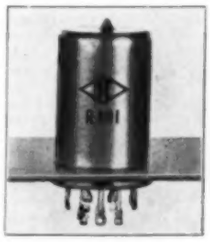
2814 SPRUCE · QUINCY, ILLINOIS

BREVITY—Identify by IEN - 12461 If you write the maker

BREVITY—Identify by IEN - 12462 If you write the maker

RELAY . . Four pole, double throw, 2 amp. on 28 volt dc., 110 volt ac.

Source: HART MFG. CO.
108-12 Bartholomew Ave., Hartford 6, Conn.



Electronic component

Diamond H Type R101 is a new aircraft-type hermetically-sealed miniature relay resigned to meet USAF Specification MIL-R-5757. Operation can be maintained in a range between minus 65 and 200 deg. C. The assembly will withstand shock in excess of 50 G. It can be employed for dependable operation at elevation to 80,000 feet.

Terminals are plug-in design or arranged for soldered connections. Coil power consumption is 1.5 watt. The relay will not drop out until current is lower than 7 volts. Special relays can be supplied with resistance ranging from 10 to 20,000 ohms on the coil.

BREVITY—Identify by IEN - 12463 If you write the maker

SEALING . . Mastic filler material for blow holes, fractures in castings

Source: A. L. OKUN
148-28 58th Ave., Flushing 55, N. Y.

No-Torch
Cold Solder

Powdered aluminum in a quick-drying non-soluble liquid vehicle is a new material supplied in semi-fluid form for application with a putty knife or by brushing or spraying after it has been thinned. It applies in filling seams and imperfections in metal assemblies. It fills pits, blow holes, fractures in castings. It serves as a metallic coating on patterns for foundry use. The vehicle evaporates leaving the deposited aluminum in a smooth surface that will not crack, chip, peel or shrink in its recommended service.

BREVITY—Identify by IEN - 12464 If you write the maker

CONVEYING . . Tapered roll curve mounts motor driven ball bearing rolls

Source: ALVEY-FERGUSON CO.
344 Disney St., Cincinnati 9, Ohio

Several sizes available

Tapered rolls with small diameter at the inside of the curve ride a V-belt driven by a motor so the rolls will forward a load riding upon them. The taper is proportioned to the radius of the curve so the load follows freely around it without tendency to move radially. In the event that adjacent sections of roll conveyor are power driven, the curve can be connected to them in place of employing the individual motor.

Sheaves are mounted to guide the V-belt around the arc of the curve. They ride on oil-impregnated bushings to maintain belt pressure against the rolls and to operate without need for lubrication. The unit makes a 90-deg. curve in a conveyor line.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 12465 If you write the maker

Now available . . . . CARBIDE CUTTING TOOLS, the first authoritative text book on carbides, designed to inform the student, the designer and the man at the machine.

"KNOW HOW"—the best productive use of manpower, machines and materials is essential in our present emergency. It is with this in mind that V-R is making this book available.

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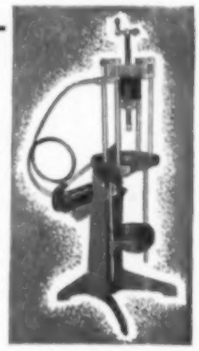
new OTC **POWER-TWIN PORTABLE PEDESTAL PRESS**



An amazingly efficient portable pedestal press, which combines with the Power-Twin Hydraulic Ram to perform tough jobs easily and quickly.

STRONG. Handles 95% of all pulling or installing jobs. Especially designed for use with OTC 17½ ton Hydraulic Puller.

AMAZINGLY PRACTICAL for all production, assembly line and maintenance operations.

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COMPACT. Base is only 20 x 21 inches.

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POWER-TWIN HYDRAULIC BENCH PRESS

Bench frame available for use with OTC Power-Twin Center-Hole Hydraulic Ram. Provides compact, inexpensive hydraulic press for mounting on bench for use in shop—or service truck for use on the job.

See your jobber for complete information or write us.

OWATONNA TOOL COMPANY
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AVOID CONFUSION
FACILITATE STORAGE

The MHS Work Carrier is a sturdy, flexible device for the transfer, storage or shipment of work parts or sub-assemblies. Stacked vertically, by means of the nesting plugs at the corners, these units constitute a rigid storage bin structure. Mounted on casters, they serve as factory trucks for the transfer of parts between processes. They are easily handled by the conventional lift truck or crane.

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Offices in Principal Cities

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- ★ You SAVE 50% in tank SPACE
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- ★ You have 50% LESS WEIGHT to handle
- ★ You SAVE 50% in maintenance LABOR as plates are changed from outside the tank without dumping solution

. . . besides all these you get faster heating or cooling. Take advantage of the engineering assistance offered by Kold-Hold to help you with your heat transfer problems.

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KOLD-HOLD MFG. CO.
LANSING 1, MICHIGAN

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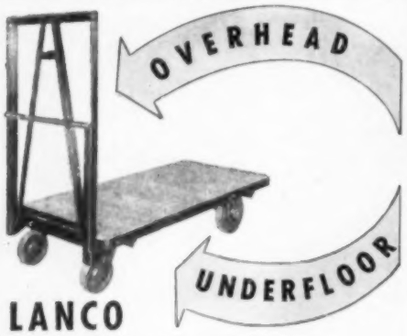

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"ENDLESS CHAIN"

MATERIAL HANDLING TRUCK PROBLEM

Overhead or underfloor tow; platform dimensions; superstructures; wheel size and material . . . all of the factors involved in developing efficient trucks for Endless Chain conveying systems can be answered by Lanco trucks. Lanco trucks, custom built from standard components, assure you of complete efficiency at an economical cost.

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Model 218

Don't let Uncle Sam down with a maintenance *let-down.* Your first step in getting defense orders is a clean plant. Doyle Vac-Its are vital to your defense programs. Write Doyle today. No obligation.

Doyle VACUUM CLEANER CO.

2235 Stevens St., S. W. Grand Rapids 7, Michigan

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NOW YOU CAN HAVE **TIME** RECORDED

THE NEW *Simplex* TIME RECORDER

• Vertical or Horizontal Print • Two Color Registration • Trigger-touch Print • Direct Subtraction • One-Minute Positioning • Attractive, Indestructible Case • This NEW Simplex Time Recorder figures payrolls easier, 50% faster — cuts payroll costs in half.

ACCURATELY AUTOMATICALLY EFFICIENTLY

SIMPLEX TIME RECORDER CO., Gardner, Mass., Dept. 110

Please give us more information on:

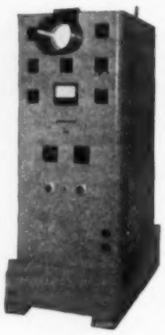
☐ Payroll Recorder ☐ Time Cards ☐ Electric Time Stamp
☐ Watchman's Clock ☐ Time Card Files ☐ Time Card Racks

Firm_____
Name_____
Street & No._____
City_____ State_____

BREVITY—Identify by IEN - 12472 if you write the maker

TESTING . . Electronic equipment checks dc. armature winding insulation

Source: GENERAL ELECTRIC CO. Dept. 6X-201, Schenectady 5, N. Y.



Is non-destructive

Faults in turn-to-turn, coil-to-coil and winding-to-ground insulation in dc. armatures are indicated by a trace on an oscilloscope screen with this new winding-insulation tester. The equipment includes a repeating type surge-voltage generator operating on 60 cycles and an oscilloscope with the required meters and controls in a rectangular housing. It measures 20 by 30 by 48 inches. Operation is on 230-volt 60-cycle single-phase input at 30 amperes. Test is made by coaxial cable connecting to a contact fixture which the operator moves over the armature commutator.

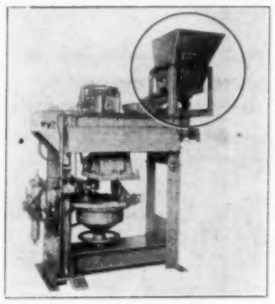
The oscilloscope screen can be calibrated for surge-crest voltages to permit measuring the voltage within approximately 3 per cent of accuracy. The tube is protected by a safety-glass window that is hinged so measurements can be made directly on the tube face. Test voltage is adjustable in 2 per cent steps to a 7,500-volt peak.

Bulletin GEC-794, 4 pages, presents illustrated description including reproduction of a voltage wave.

BREVITY—Identify by IEN - 12473 if you write the maker

FEEDING . . Vibrating hopper for sand and similar granular materials

Source: WM. DEMMLER & BROS. 421 N. Main St., Kewanee, Ill.



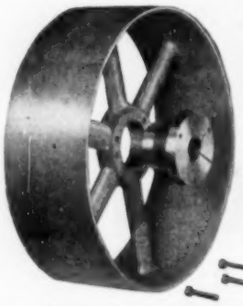
Feeder lists at $175

New feeder, shown on one of the company's core-blowing machines, takes sand from a chute or dump bucket and feeds it in variable amounts to a small hopper ahead of the sand-blowing valve. The feeder is operated by two Anderson rotary-type pneumatic vibrators in which air pressure blows a steel ball around a circular track as previously described IEN-9778-45. A valve in the air line regulates speed of the ball and accompanying vibrating feed action.

Two feeder designs have 4 and 6 cu. ft. capacity for use in chute loading and dump-bucket loading. The former is shown in the illustration. Required air pressure ranges between 80 and 120 pounds. The feeder assembly is shipped complete with valves and equipment required for mounting.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 12474 if you write the maker



SAVE WITH **PYOTT** QUE-DEE CAST-IRON **PULLEYS**

Pyott Que-Dee (quick detachable) Flat Belt Pulleys offer the same economies and time-saving advantages in assembly and field operations as Pyott Que-Dee Sheaves. The Taper-Tight Bushing, with standard keyway, slips easily over shaft. The tapered hub of the Que-Dee Pulley slides easily into position on the Taper-Tight Bushing. Three bolts pull pulley bushing and shaft into a positive powerful pull-up fit. For dismounting, the same bolts, inserted in demounting holes, act as jack screws to loosen pulley.

Immediate Delivery in popular diameters and face widths from complete factory stocks or your mill supply.

WRITE FOR CATALOG 80

PYOTT FOUNDRY & MACHINE CO.

326 NORTH SANGAMON STREET • CHICAGO 7, ILLINOIS

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SPEED PRODUCTION—No moistening. Stick instantly.

EASY APPLICATION on hard-to-reach, hard-to-label surfaces.

FLEXIBLE and stretchable for curved or uneven surfaces.

PERMANENT—Resistant to stain, moisture, scuffing, delamination. Removable, if desired, without staining.

BEAUTIFUL—Finest color printing; die-cut; embossed; varnished or acetate laminated.

The outstanding qualities of MYSTIK LABELS are due to rubber-saturated stock and the strongly bonded rubber adhesive, providing strength, flexibility, toughness, strong adhesion and ease of handling. Write for full information and samples.

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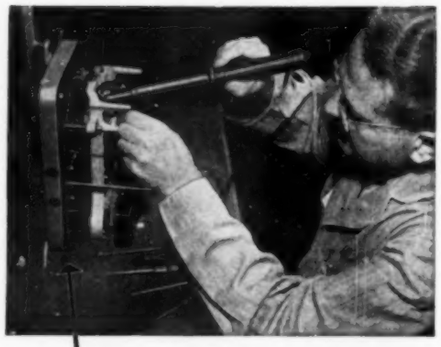
2644 NORTH KILDARE • CHICAGO 39

BREVITY—Identify by IEN - 12476 if you write the maker



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DETROIT 2, MICH.

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SKINNER STAINLESS STEEL SOLENOID VALVES

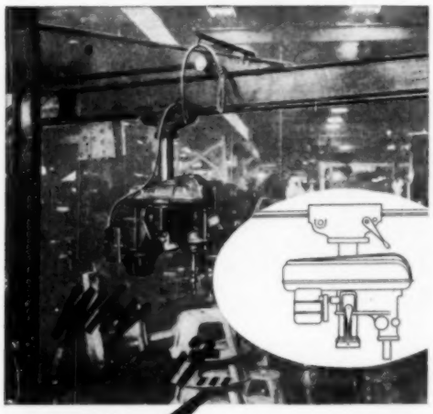
Small size — Rugged — Large capacity

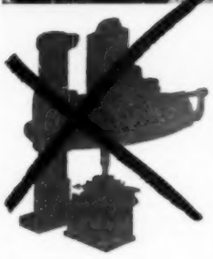
The small size of Skinner Solenoid Valves belies their rugged construction and unusually large capacity. These valves have a standard range from 5 to 250 p.s.i., and a special range from 5 to 850 p.s.i., and can be used for gaseous or liquid media. Their soft insert seat prevents leakage and positive action is assured by spring loading. Skinner Valves may be used in any position, with pipe connections furnished to suit specifications. Power consumption is 10 watts max. Special coils for high humidity or high temperature applications can be supplied. Standard models are approved by Underwriters' Laboratories.

Write for Bulletin No. 501

SKINNER ELECTRIC VALVE DIV.
THE SKINNER CHUCK COMPANY
139 Belden Ave., Norwalk, Conn.

BREVITY—Identify by IEN - 12479 if you write the maker





when a WALKER-TURNER Drill Head does the work of a radial drill!

There's no need to hold up part output because you can't get delivery on that radial drilling machine. A Walker-Turner Drill Head, as mounted in the photo (above), will do the work of a large radial drill.

Designed to work at all angles . . . to operate continuously and accurately at any speed from 400 to 2600 r.p.m., these flexible production tools can be readily adapted to your drilling requirements.

See your Walker-Turner Distributor at once. He has both 15" and 20" Drill Heads for immediate delivery. Take advantage of this opportunity to solve a production problem at low cost.

SOLD ONLY THROUGH AUTHORIZED DEALERS

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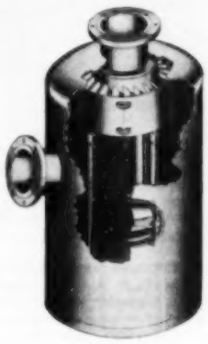
KEARNEY AND TRECKER CORPORATION
PLAINFIELD, N. J.

DRILL PRESSES • RADIAL DRILLS • TILTING ARBOR SAWS • BELT and DISC SURFACERS • METAL-CUTTING BAND SAWS • SPINDLE SHAPERS • JOINTERS

BREVITY—Identify by IEN - 12481 if you write the maker

SEPARATING . . Receiver purifier for steam and compressed air lines

Source: V. D. ANDERSON CO.
1931 W. 96th St., Cleveland 2, Ohio



No moving parts

New assembly in a receiver for the company's Hi-eF Purifier, previously described IEN-10035-51, applies in a line carrying steam or compressed air. The unit removes foreign matter and entrainment in order to protect equipment such as turbines, steam engines and equipment operating on compressed air. When operating on steam the unit is guaranteed to deliver 99.9 per cent quality and to purify steam from a boiler having solids concentration of 1,000 ppm. to less than 0.5 ppm. It will remove 99 per cent of entrained oil also to deliver exhaust steam containing less than 2.5 ppm.

Air or steam enters the inlet connection at one side, dropping in velocity inside the receiver so most of the entrained material will separate out to the bottom where it is drained away. The steam or air then enters the multistage purifier mounted inside the drum for removal of the remaining entrainment. Assemblies are available in pipe sizes from 4 to 16 inches. Overall height, in the design illustrated, is 54 to 90 in. with receiver diameter at 24 to 42 inches.

BREVITY—Identify by IEN - 12482 if you write the maker

SNOW PLOW . . Engine driven, gathers and throws snow to one side

Source: TORO MFG. CORP.
3040-44 Snelling Ave., Minneapolis 6, Minn.

Ton a minute

Engine driven blades, rotating at the front of this new Snow Boy plow, cut a 33-in. path into soft or packed and drifted snow. The blades feed the snow to a centrifugal blower, also driven by the 10-hp. air-cooled gasoline engine with which the machine is equipped. The blower ejects the snow, has capacity to throw it to 65 ft. in any direction selected by the operator.

He walks behind the machine where, by pivoting the steering handle, he can select travel drive through both independent clutches on the wheels on the two sides or through one or the other when he desires to turn. He also can select any of six forward speeds between ½ and 2¾ mph. and two reverse speeds between ¼ and ½ mph. The blower operates at any of four speeds between 500 and 2,100 rpm.

Capacity is to 500 cu. yd. of snow per hour. The engine is an Onan Model CK. The machine measures 8½ ft. in overall length, 34 in. in width. It rides on a 28-in. wheel base. Weight of the complete assembly is 990 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 12483 if you write the maker

Reach Anyone Instantly

Boost Output

Cut Costs

SAVE TIME WITH
ELECTRONIC
AMPLICALL
INTERCOMMUNICATION

Gear up *now* for bigger output and increased efficiency. AMPLICALL provides 2-second speech contact between all departments for fast relay of orders and information. Stops wasteful walking and waiting—keeps plant and office personnel on the job every working minute—takes the load off busy switchboards. AMPLICALL *gets more work done for every operations dollar spent*—pays for itself quickly. Get the full details *today*.

SEE YOUR CLASSIFIED PHONE BOOK under "Intercommunication" for your AMPLICALL specialist, or write us direct

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RAULAND-BORG CORPORATION • 3522-K ADDISON ST., CHICAGO 18, ILL.

BREVITY—Identify by IEN - 12484 if you write the maker

100% CONCENTRICITY AND HARDNESS TESTS ASSURE ACCURACY— SUPERFINISH BORES ASSURE LONG LIFE OF UNIVERSAL DRILL BUSHINGS

153-A

UNIVERSAL ENGINEERING COMPANY
FRANKENMUTH 6, MICHIGAN

BREVITY—Identify by IEN - 12485 if you write the maker

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— THEY'RE MODERN
— 7 TYPES
— ASK ABOUT THEM!

MODERN, rugged, *dependable!* A great range of types and sizes—for everything from light loads to heavy loads. Babbitted, Bronzoil, SC Ball Bearing, Dodge-Timken Type E Roller Bearing, Angle Frame, Protected Screw. Shaft sizes from 1/2" to 4". Travel from 4" to 48". Stocked by Dodge Distributors. Write us for details.

DODGE MANUFACTURING CORPORATION, 600 Union St., Mishawaka, Indiana

DODGE
of Mishawaka, Ind.

FIRST IN POWER TRANSMISSION MACHINERY

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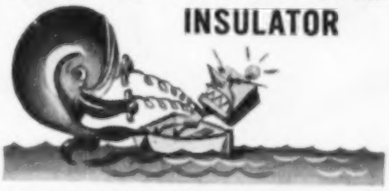
SYNTHANE is a Whale of an INSULATOR



Synthane laminated plastics have a combination of superior electrical qualities that may make them just the materials you've been seeking to make your product better.

One advantage is excellent electrical insulating ability. Others are high dielectric strength, low dielectric constant and low power factor. Together with Synthane's light weight, ease of machining and good mechanical and chemical characteristics, they make Synthane a valuable material for many applications in almost every industry.

If your present materials are in any way unsatisfactory and your quality standards are high it may pay you well to find out more about Synthane. For your copy of the Synthane catalog, clip and mail the coupon today.

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SHEETS • RODS • TUBES
FABRICATED PARTS

SYNTHANE
MOLDED • LAMINATED
MOLDED-MACERATED

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South River Road, Oaks, Pa.

Please send me a copy of the complete Synthane catalog.

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Firm _____
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City _____ State _____

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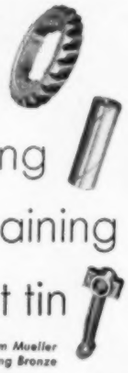
MUELLER BRASS CO.

600 series
a better bearing
bronze containing
no hard-to-get tin



Four typical parts forged from Mueller Brass Co. "600" series Bearing Bronze

If you use gears, connecting rods or other parts of bearing metal in your products, it will pay you to investigate Mueller Brass Co. "600" series, a forgeable bronze that *contains no critical tin.* This bearing metal outperforms phosphor bronze and other bearing metals and will save you money in your applications. "600" series alloys can be forged into relatively complicated shapes . . . have low coefficient of friction . . . high resistance to corrosion and a tensile strength 2½ times greater than cast phosphor bronzes. There is a "600" series alloy with the properties to fit your bearing metal needs . . . write today for further facts.

MUELLER BRASS CO. PORT HURON 27, MICHIGAN

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American Folding Chairs

NEW IMPROVED DESIGN!

BEST FOR EVERY FOLDING CHAIR PURPOSE!

- DURABLE—strong steel frame, reinforced
- SAFE—no tipping, pinching, snagging hazards
- COMFORTABLE—extra-wide, extra-deep seats and backs
- CONVENIENT—fold quietly, quickly, compactly
- RUBBER SHOES—long-life, replaceable
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OVER EIGHT MILLION IN USE!

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Grand Rapids 2, Michigan
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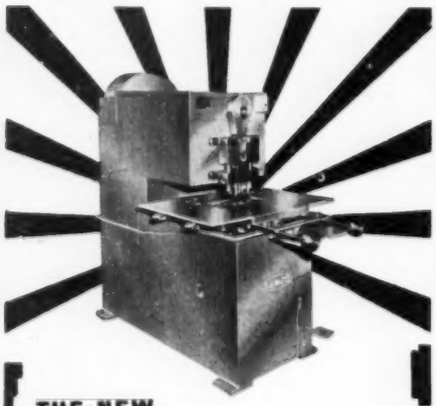

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PUNCHES HOLES ANY SHAPE — ANY SIZE UP TO 12" X 4½" AT ONE SETTING.
NO SPECIAL DIES ARE NEEDED

Write for latest literature, prices and information to—

SERVICE MACHINE COMPANY
INCORPORATED
200 MILLER STREET, ELIZABETH, N. J.

BREVITY—Identify by IEN - 12490 If you write the maker

CALCULATING . . Slide rule for problems involving metal weight

Source: WARREN-KNIGHT CO.
138 N. 12th St., Philadelphia 7, Pa.

$17.50 with two manuals

Problems involving metal weight of metals can be solved on one face of this new Wakeo Weight Rule. Standard mathematical calculations can be made with scales on the reverse face. The rule is made with a magnesium core, plastic surfaces, aluminum brackets, lucite cursor and telescoping screws. The scales are washable. Graduation markings are accurate within 0.001 inch. The rule measures 12¼ by 2 by $\frac{5}{8}$ inch. It weighs 4 ounces.

Scales on the weight side include thickness from $\frac{1}{32}$ to 5 ft., width from $\frac{1}{16}$ in. to 10 ft., length from ¼ in. to 40 ft., weight from 1 lb. to 1 ton, shapes to include quarter round, fillet, half round, ball, round, octagon, hexagon, rectangular, square. Materials include aluminum, brass, cast iron, lead, steel.

BREVITY—Identify by IEN - 12491 If you write the maker

LUBRICATING . . Cutting compound based on thread sealing material

Source: FELT PRODUCTS MFG. CO.
1523 Carroll Ave., Chicago 7, Ill.

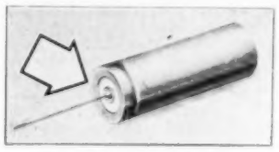
Free sample upon request

New application for use as a cutting compound in machining operations is announced by the company for its Type C-5 compound, previously described IEN-6447-49, as a material to seal threaded connections. The compound prevents galling and permits high cutting speed. It protects tool edges. It is suitable for temperatures to 1,800 deg. F.

BREVITY—Identify by IEN - 12492 If you write the maker

SEALING . . Teflon-metal plug to solder in end of capacitor can

Source: UNITED STATES GASKET CO.
658 N. 10th St., Camden 1, N. J.



Sizes 0.377 to 0.962 inch

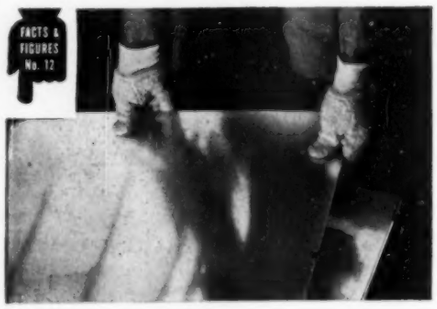
Teflon is fused inside a metal ring and around a metal bushing ready for solder application in the end of a capacitor can and ready to take the condenser wire through its center. The unit is soldered to both the wire and the can, the former seal being completed after the capacitor assembly has been evacuated.

The seal remains serviceable in a temperature range between minus 110 and plus 500 deg. F. Water absorption is zero. The material is non-flammable and impervious to attack by corrosive atmospheres and fungus.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 12493 If you write the maker

FACTS & FIGURES No. 12



JOMAC GLOVES

save 90c per man per workday in handling sheet metal

A large manufacturer of kitchen appliances* tested all types of gloves for handling sheet metal. Jomac proved superior to any other glove tried. The company standardized on Jomac. Cost records show Jomac is now saving the company 90c per man per workday.

*Name on request

JOMACS ARE
Washable . . Reversible . . Flexible . . Heat-resistant
Protect against heat, cold, rough and sharp edges

C. WALKER JONES CO.
6135 N. Lambert Street, Philadelphia 38, Pa.

BREVITY—Identify by IEN - 12494 If you write the maker

FOR PRESSES, DATERS, AND MARKING MACHINES

FORCE BASE-LOCK TYPE

SET YOUR OWN TYPE ... IT LOCKS TIGHT!

Simply press type in base with finger tips. Special cast rubber prints on any surface.

Write for catalog D

WM. A. FORCE & COMPANY, INCORPORATED
64 WHITE STREET, NEW YORK CITY 13, N. Y.

THREE QUARTERS OF A CENTURY'S SERVICE

BREVITY—Identify by IEN - 12495 If you write the maker

Now Available . . .

a new wall-hung model of the Sanistand urinal for women

THIS NEW SANISTAND urinal has the same features which have made regular Sanistand fixtures so outstanding. Its large bowl, extended lip, slanted rim and convenient 18-inch height tend to discourage misuse. The new style Sanistand is available with hand or foot operated valve and features the siphon vortex water action with flushing rim which empties bowl quickly and quietly, rinses the inside of the fixture and prevents splashing. Because it is made entirely of genuine vitreous china it is easy to clean and keep clean. Comes in choice of attractive colors.

● The Sanistand fixture—the American-Standard urinal for women—has already proved successful for contributing to the sanitation, convenience, and general appearance of public rest rooms for women. Now it is available in another model which reduces rest room maintenance still more. Because the new Sanistand is wall-hung there are no floor obstructions to clean around. You can clean the entire floor in one unbroken sweep . . . quickly, easily and much more thoroughly than before.

This new model of Sanistand fixture is typical of the many contributions American-Standard has made to the advancement of sanitation and convenience in public rest rooms. If you would like more information on the Sanistand fixture and on other American-Standard fixtures for modern, sanitary public rest rooms, just write to **American Radiator & Standard Sanitary Corporation, Dept. IEN-12, Pittsburgh 30, Pennsylvania.**

AMERICAN-Standard
First in heating . . . first in plumbing

Serving home and industry: AMERICAN-STANDARD · AMERICAN BLOWER · ACME CABINETS · CHURCH SEATS · DETROIT LUBRICATOR · KEWANEE BOILERS · RUUD WATER HEATER · TORRINGTON TRUCK

▼ BREVITY—Identify by IEN - 12497 If you write the maker ▲▼

SYLPHO-NATHOL

1% of Cabot's Sylpho-Nathol in your cutting oil *counteracts* skin irritations.

Save lost man hours. Use Sylpho-Nathol, the economical, germ-killing disinfectant, in your straight or emulsified cutting oil. Excellent, too, for disinfecting sinks, lavatories, industrial equipment.

TEST SYLPHO-NATHOL *FREE*

Try it in your own plant. We will send you free of charge, a large, "get-acquainted" sample of Cabot's Sylpho-Nathol, the all-purpose disinfectant. Write today!

SYLPHO-NATHOL COMPANY
1249 Oliver Building, Boston 9, Mass.

▼ BREVITY—Identify by IEN - 12498 If you write the maker ▲▼

BOSS ®

THE BEST KNOWN NAME IN

WORK GLOVES

There's a perfect Boss Glove for *every* job

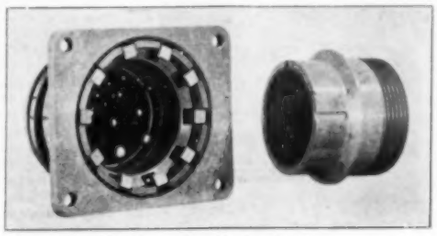
ASK YOUR DISTRIBUTOR or send for complete free CATALOG and new "WORK GLOVE SELECTOR" . . . the quick and easy way to find exactly the right glove for every job!

THE BOSS MANUFACTURING CO.
DEPT. IE-12, KEWANEE, ILL.

▼ BREVITY—Identify by IEN - 12500 If you write the maker ▲▼

CONNECTOR . . Multiple circuit assembly disconnects on 10 to 40 lb. pull

Source: E. B. WIGGINS OIL TOOL CO.
3422-26 E. Olympic Blvd., Los Angeles 23, Calif.



Prongs recessed for protection

Movable fingers around the circumference of the flanged portion of this new electric connector grip a shoulder of the mating portion. They release upon pull of 10 to 40 lb. depending upon the setting of a spring. The parts make a weatherproof connection when they are joined together. Any normally required number of wires can be specified.

▼ BREVITY—Identify by IEN - 12501 If you write the maker ▲▼

PROTECTING . . Safety shoes, high and low styles, width C, D, E, EE

Source: RECORD INDUSTRIAL CO.
5303 Arch St., Dept. I. E., Philadelphia 4, Pa.

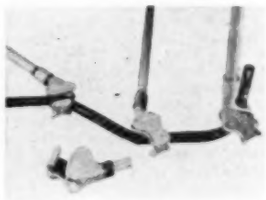
Comfortable to wear

Soft upper leather treated for resistance to attack by chemicals, stitching with Dacron threads and lining of Dacron fabric characterize the construction of the company's new Style S-485 and Style S-435 safety shoes, particularly for use in chemical plants. Neoprene soles are combined with neo-cord heels. The laces are made of Dacron.

▼ BREVITY—Identify by IEN - 12502 If you write the maker ▲▼

BENDING . . Hand operated tool, six grip positions on ¾ in. conduit

Source: TAL BENDER INC.
415-19 N. Water St., Dept. 35, Milwaukee 2, Wis.



List is about $7.

Bends, elbows, offsets, loops, in simple or complex arrangement, can be put into ¾-in. conduit with this new hand tool. It is known as the company's 6-Way Hickey. One of the bending positions is a stub hole to handle conduit projecting from a floor or wall. The tool head is equipped with a safety neck that extends into the pipe handle to prevent breaking at the threads.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 12503 If you write the maker ▲▼

STEAM

FOR HEAT OR PROCESS

A complete steam plant backed by undivided responsibility • Shipped completely assembled • More than 80% thermal efficiency guaranteed • 4-pass design provides 5 sq. ft. of heating surface per b.h.p. • Built-in induced draft eliminates need of expensive chimney • Simple installation • Clean, quiet operation • Heavy-duty construction assures long-lived dependability.

Superior Steam Generators are manufactured in 18 sizes from 20 to 600 b.h.p. for pressures up to 250 p.s.i. or for hot water heating.

For complete details, write for Catalog 317

SUPERIOR COMBUSTION INDUSTRIES, Inc.
Factory: Emmaus, Pa.
Exec. Offices: Times Bldg, Times Sq., New York N. Y.

SUPERIOR STEAM GENERATORS

▼ BREVITY—Identify by IEN - 12504 If you write the maker ▲▼

BROWNHOIST BUILDS BETTER BUCKETS — for less money

DIRECT FROM FACTORY TO YOU

ROPE-REEVE, POWER WHEEL AND LINK TYPE

Write for illustrated catalogue

INDUSTRIAL BROWNHOIST CORPORATION
BAY CITY, MICHIGAN

146

▼ BREVITY—Identify by IEN - 12505 If you write the maker ▲▼

NEW JACK LOCATES ON ANCHOR BOLT

Empco JACK STYLE JS

- SELF-ALIGNS TO UNEVEN FLOOR
- EASILY LIFTS 8,000 LBS.
- SIMPLY TURN ADJUSTING NUT TO RAISE OR LOWER MACHINE
- VI-SORB MOUNTING PADS ABSORB VIBRATION

Where anchor bolts are used, this new Empco Jack Style JS will save considerable time in setting and keeping equipment level.
Tested to support 20 tons and lift 8,000 lbs., this Empco Jack is the answer to any machine installations. Anchor bolt hole through the jack assembly allows clearance for ¾" diameter bolt. This permits the Empco Style JS Jack to be used at the *precise spot* where equipment was designed to be best supported.
Available in three sizes: 1¼", 2", and 3" (minimum heights) with VI-SORB mounting pads as optional equipment.
Write for specifications and prices of complete line of Empco Leveling Jacks.

EMPCO PRODUCTS

THE ENTERPRISE MACHINE PARTS CORPORATION
2737 JEROME AVENUE • DETROIT 12, MICHIGAN

▼ BREVITY—Identify by IEN - 12506 If you write the maker ▲▼

THIS TOOL IS WORTH $12,500

ROTARY ELECTRIC IMPACTOOL

The shop that can do a 3-hour job in 1 hour and 5 minutes, is bound to make money, for that 64% saving in labor time is pure profit. This is the accomplishment of a well-known motor rebuilding company located in the Southwest, which uses four Ingersoll-Rand electric Impactools in tearing down and assembling automobile engines.

The switch to electric Impactools saved 115 minutes per engine, which enabled them to increase their production by 3 completed engines per day. This meant an additional clear net profit of $231 per day, figured conservatively, or $50,000 a year . . . $12,500 for each Impactool. Needless to say, the cost of the tools was amortized in just a few days.

Send for your copy of Report 5082-6 which gives all the names, facts and figures on this outstanding extra-profit story.

Ask your Jobber for an Impactool demonstration

Ingersoll-Rand
11 Broadway, New York 4, N. Y.
Originator of Impactools — Air and Electric

BREVITY—Identify by IEN - 12507 If you write the maker

wherever you need to vary the voltage . . .

Inductrols

(DRY-TYPE INDUCTION VOLTAGE REGULATORS)

Typical Uses:

- Motor speed control
- Rectifier control
- Heat control
- Dielectric testing
- Instrument calibration

Hand-operated, G-E Inductrol being used in the calibration of a-c voltmeters against standard instrument. Just one of the many ways it helps increase efficiency and speed production.

G-E Inductrols are small, dry-type induction voltage regulators, suitable for many applications.

Unit shown above operates from either 120 or 240 volt a-c circuits, with output variable—steplessly, with micrometer-fine precision, from 0 to 240 and 0 to 480 volts respectively. It will handle 5 or 10 amperes. Absence of brushes, contacts and commutator reduces maintenance. Unit has autotransformer efficiency.

You can get G-E Inductrols in hand-operated or in manually-controlled, motor-operated designs for circuits 600 volts and below. For complete information, see your nearest G-E sales representative, or write for Bulletin GEC-795, *General Electric Company, Schenectady 5, N. Y.*

GENERAL ELECTRIC

404-85

BREVITY—Identify by IEN - 12508 If you write the maker

Free Trial for Gýrol Fluid Drives

ACT NOW

Learn about Gýrol Fluid Drives *firsthand.*

We invite you to try an American Blower Type TM Gýrol Fluid Drive in actual production on your own machine. We'll arrange it at no cost, no obligation to you.

You'll see how these remarkable units save power, provide smooth acceleration and overload protection, and absorb shocks.

To take advantage of this offer, write us direct. Describe the machine on which you want to use the TM unit and state horsepower of present motor. Then, we'll contact you to arrange installation and trial period.

AMERICAN BLOWER

American Blower Corporation, Detroit 32, Michigan

Division of American Radiator & Standard Sanitary Corporation

Serving home and industry AMERICAN-STANDARD • AMERICAN BLOWER CHURCH SEATS • DEXTRIN LUBRICATOR • NEWARK BOILERS • ROSS HEATER • TONAWANDA IRON

BREVITY—Identify by IEN - 12509 If you write the maker

THOUSANDS OF USERS REPORT

Noah's Pitch seals cracks and holes in most any surface . . . keeps 'em sealed for years. Won't dry out, get brittle, or crack; is easily applied with trowel or knife. Sticks to wood, metal, masonry, glass! Noah's Pitch works smoothly right out of the container in any weather, bonds to moist or wet surfaces. Tested by thousands of users in years of actual use. Order a supply today from your Carey representative—or mail coupon for free sample and literature.

Carey

PACKED IN ALL-STEEL SEALED CANS AND DRUMS CONTENTS FROM 1 LB. TO 600 LBS.

THE PHILIP CAREY MFG. CO.
LOCKLAND, CINCINNATI 15, OHIO

Please send free sample of Noah's Pitch and descriptive literature.

NAME_____

ADDRESS_____

CITY_____ STATE_____

BREVITY—Identify by IEN - 12510 If you write the maker

SPREADING . . Roller coating machine applies adhesive to sheets of paper

Source: POTDEVIN MACHINE CO.
1285 38th St., Brooklyn 18, N. Y.

With 40 ft. conveyor

Variable speed control for this new conveyor-type glue-spreading machine permits setting the operation to a maximum of 3,000 sheets per hour for either hot or cold glue. The machine will take paper of any weight to 3-ply index and from 6 by 6 in. to 28 by 36 inches. The glue can be applied solid or in strips. A thermostatically-controlled pot is available for hot glues. A side-register control keeps the work in line.

Equipment includes brass rollers with the exception of the applicator roller which is made of stainless steel and can be removed for cleaning. A glue tank also is removable for cleaning. A conveyor is supplied in specified length. A continuous pumping mechanism is available to maintain a constant level of adhesive in the 5-gal. feed tank. The work is delivered glue side up. Overall dimensions of the machine are 5 ft. in width by 6½ ft. in length. It mounts on the floor as shown.

BREVITY—Identify by IEN - 12511 If you write the maker

SEPARATING . . Dehydrator for diesel and fuel oils, gasoline

Source: BOWSER INC.
1338 Creighton Ave., Fort Wayne 2, Ind.

350 and 600 gpm.

Water-free oil can be delivered to a diesel engine or burner by application of a new cylindrical dehydrator that removes both free and entrained water in passage through cartridge elements. The accumulated water can be released by opening a valve manually. An ejector can be supplied as an accessory to operate in connection with a float. Inlet and outlet connections measure 3 in. in one unit, 6 in. in another. The housing is about 37 and 43 in. in diameter. Clearance height is about 104 and 108 inches.

The elements are made with center tubes of wound cellulose impregnated with a special plastic and polymerized, a perforated metal cylindrical cage, a series of O-shaped discs made of fiber glass, an outer cylindrical cage of perforated metal and a bag enclosure made of glass cloth. Access to the elements is through a gasketed cover on the top of the housing. It is held in place with swing bolts.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

FIND WHAT YOU WANT?

Product index, page 110, includes helpful suggestions

BREVITY—Identify by IEN - 12512 If you write the maker

*Overcured Sections — unavoidable every 30' to 40' in all belts made by the flat press method. Only Rotocuring eliminates this major cause of belt failure.

OCS* means Trouble Ahead!

This Achilles Heel of Conventional Conveyor Belts now completely eliminated by ROTOCURE

The manufacture of conveyor belting by conventional flat press curing results in overcured segments 2" to 4" long across the belt width. These weakened portions of the belt are inherent in this process of "start and stop" vulcanization. They get a double treatment because earlier cured areas move forward *less than a full press length.*

Rotocure, the modern BWH method, eliminates these Achilles Heels of otherwise strong belting. Your Rotocure belt is *constantly* in uniform motion during vulcanization.

How does it pay off? In (1) elimination of mechanical distortion at the press ends, (2) up to 40% increased belt flex life, (3) constant, uniform stretch, (4) uniform, abrasion-resistant covers.

Look into BWH rotocured conveyor and transmission belts. They permit operation at lower tensions . . . give you an *additional* bonus in extended belt life.

Another Quality Product of

Boston Woven Hose & Rubber Company

Distributors in all Principal Cities

PLANT: Cambridge, Mass. • P. O. Box 1071, Boston 3, Mass., U. S. A.

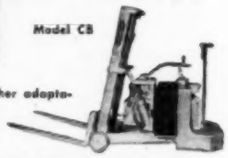
BREVITY—Identify by IEN - 12513 If you write the maker

MOTO-TRUC'S 6 basic models QUICKLY ADAPTABLE TO ANY PROBLEM IN THE "WALKIE" FIELD

A "twist of the wrist" does it.

Moto-Truc's Pallets, Platform or Hi-lift, with all controls incorporated in the hand grip, are simple and easy to operate. They are preferred by operators and maintenance men. All welded construction and that extra power saves time, money and man hours. CUT THAT COSTLY "DOWN-TIME."

Model CB



MOTO-TRUC MODEL CB is another adaptation for ramps and inclines. 18-volt motor drive handles loads up to 2,500 lbs. Any type mast available.

WRITE FOR BULLETIN NO. 51 TODAY

THE MOTO-TRUC CO.

1953 E. 59th ST., CLEVELAND 3, OHIO

PALLET, PLATFORM AND HI-LIFT TRUCKS

BREVITY—Identify by IEN - 12514 If you write the maker

* first Kalman floor laid in 1916 still in use!

No question about a Kalman Concrete floor's ability to "take it".

Testimony tells again and again of Kalman ruggedness.

For the key to maximum durability in your flooring, ask about Kalman "absorption control" — write for bulletin.

KALMAN FLOOR COMPANY

110 E. 42nd St., New York 17, N. Y.

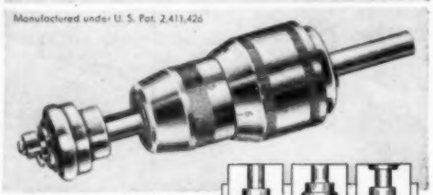
BOSTON • CHARLOTTE • CHICAGO • CLEVELAND DAYTON • DETROIT • HOUSTON • LOS ANGELES • PHILADELPHIA • SAN FRANCISCO

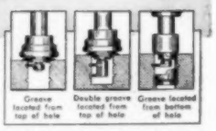
BREVITY—Identify by IEN - 12515 If you write the maker

Waldes Truarc Internal Grooving Tool for precision cutting of internal grooves in bores and housings

FAST! ECONOMICAL! NEEDS NO SKILLED LABOR!

Manufactured under U. S. Pat. 2,411,426





Internal groove-cutting becomes the simplest of operations with Waldes Truarc Internal Grooving Tool. Easy to adjust—easy to operate . . . readily adaptable to individual requirements.

Designed for use in any hand drill or automatic drill press and screw machine . . . assures a concentric recess without injury to metal. Operates by fingertip pressure—especially suitable for unskilled operators.

The Waldes Truarc Grooving Tool when used in an electric or pneumatic hand drill, can be taken to the job eliminating disassembly and excessive handling . . . resulting in all-around savings in time and costs!

Write now for descriptive brochure giving mechanical details, cutting sizes . . . extra features

WALDES TRUARC GROOVING TOOL

WALDES KOHINOOR, INC.

47-16 Austel Pl., Long Island City 1, N.Y.

BREVITY—Identify by IEN - 12516 if you write the maker

STANDARD ONLY with THRIFTMASTER FULL BALL BEARING

Completely Adjustable

UNIVERSAL JOINT DRILLHEADS

Here's a **premium feature** that comes in the **regular package** when you buy Thriftmaster Universal Joint Drillheads. Full Ball Bearing construction coupled with Thriftmaster design and manufacturing dependability, assures smooth, steady, positive drillhead performance **that will last!**

THRIFTMASTER UNIVERSAL JOINT DRILLHEADS

2 to 10 (or more) Spindles . . . Capacity to 7/8" in Cast Iron 6" to 10" (or larger) Circle

OTHER THRIFTMASTER PRODUCTS

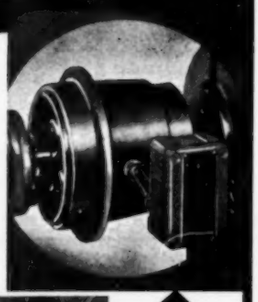
Special Fixed Center and Standard Eccentric Adjustable Drillheads . . . Multiple Spindle Automatic Reverse Tap or Drill Attachments

THRIFTMASTER PRODUCTS CORPORATION
1040 N. Plum St., Lancaster, Pa.
also makers of
DORMAN AUTOMATIC REVERSE TAPPERS
4 Sizes • Friction & Positive Drives • Capacity 1/8-1/4 to 2" in Steel

BREVITY—Identify by IEN - 12517 if you write the maker

Can it improve YOUR PRODUCTS? YOUR PRODUCTION?

ANCHOR *TORQUE-SENSITIVE* **MECHANICAL** *Control*



COUPLINGS for all direct drives

(Incorporates standard flexible coupling) Operating range 10 to 2,000 inch pounds.

PULLEYS for belt or chain drives
Operating range 20 to 10,000 inch pounds

● These automatic mechanical units make use of increasing torque to control the operation of machinery. They protect machinery from overload and reduce "down time" by eliminating sheared pins. They will also operate signals to give ample warning of build up in load.

Since 1938 many large industries have specified ANCHOR CUT-OUTS. They are the established "protection method" for the conveyor industry.

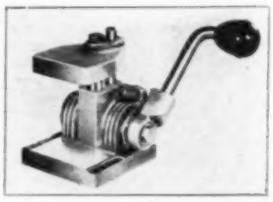
WRITE FOR CATALOG 50A

ANCHOR STEEL & CONVEYOR CO.
DESIGNERS & MANUFACTURERS
6906 Kingsley Ave., Dearborn, Mich.

BREVITY—Identify by IEN - 12519 if you write the maker

DRILLING . . Cam operated jig positions small work under drill plate

Source: ESCO ENGINEERING CORP.
1938-42 E. Woodbridge, Detroit 7, Mich.



Cam action is patented

Mijit B-6 is a new single-post jig to hold small parts in short and medium production runs. The jig mounts a bushing plate that is adjustable for vertical work height and that acts as the means to clamp the work as well as to guide the drill. It pulls the plate down upon the work by cam and lever action to hold it securely and release it quickly. Base and back are finished so the jig can be positioned vertically or horizontally. Vertical movement is through one inch. The jig represents addition to the company's line previously described IEN-6024-39.

BREVITY—Identify by IEN - 12520 if you write the maker

DRYING . . Granular silica gel for packaging use, resembles sand

Source: DAVISON CHEMICAL CORP.
18-22 Hopkins Place, Baltimore 3, Md.

Dries interior of packages

Protek-Sorb is a new granular form of silica gel to pick up moisture and thus prevent mold, mildew and corrosion inside packages containing products for shipping or storing. It meets the new military packaging desiccant specifications, MIL-D-3464. It picks up moisture by adsorption, will take up approximately 20 per cent more moisture than the older form of silica gel previously manufactured by the company.

BREVITY—Identify by IEN - 12521 if you write the maker

CLEANING . . Flexible shaft unit for 3 to 10 in. lateral sewer lines

Source: SPARTAN TOOL CO.
1916-20 Columbia Ave., Chicago 26, Ill.

Model 8000 designates a new machine in the company's line of sewer-cleaning equipment. It handles a 110-ft. length of ¾-in. flexible shaft of the company's own manufacture. It feeds this shaft out of and back into an enclosed drum. Waste matter drawn from a sewer line with the retracting shaft cannot spatter on floors, walls or ceilings. Drive is by a motor mounted on top of the assembly. A supporting frame rides on rubber-tired wheels at one end and on a skid at the other.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 12522 if you write the maker

Carryers

Circular on Request . .

. . . ARE DESIGNED AND BUILT TO CARRY YOUR SPECIFIC PARTS DURING ALL PROCESSING STAGES . . .

- *Save Man hours*
- *Save Handling Time*
- *Cut Repair Costs*
- *Protect Critical Surfaces*

Mid-West has the specialized personnel, production experience, equipment and facilities to serve you on basket-type "Carryers"

PIONEERS SINCE 1927 . . . IN WIRE CARRIERS AND MISC. TOTE BIN BASKETS

"If it's made of wire, we can make it"

SPECIALISTS IN MEANS OF SUSPENDING MACHINED PARTS

MID-WEST WIRE PRODUCTS CO., INC.
JERRY GERALDS, President
FENKELL AT LINWOOD • DETROIT 21, MICH.

BREVITY—Identify by IEN - 12523 if you write the maker

Tell Us Your Production Problems . . . We'll Help You Solve Them

"LOGAN" HYDRAULIC CYLINDERS

SAVE TIME · EFFORT · MOTION Here's fast-acting, positive controlled power for all types of industrial applications.

LOGAN 750 SERIES

ROTATING TYPE—Seven standard sizes from 5" to 14" diameter bore. Larger sizes special to order. Maximum operating pressure 500 p.s.i.

NON-ROTATING TYPE—Eight standard sizes from 2" to 8" diameter bore. Larger sizes special. Maximum operating pressure 750 p.s.i.

LOGAN ROTOCAST® SERIES

7 STANDARD MOUNTINGS

Sizes from 2" to 8" bore; any length stroke up to 8 feet. Other bores and lengths are special. Four piston rod end types. Operating pressures to 1500 p.s.i.

Logan Manufactures 6,975 Standard Cataloged Items

Free Catalog On Request

- AIR CONTROL VALVES — CATALOG 100-4
- AIR CHUCKS — CATALOG 70-1
- AIR CYLINDERS — CATALOG 100-1
- AIR and HYDRAULIC PRESSES — CATALOG 51
- COLLET GRIP TUBE FITTINGS — CATALOG 44
- HYDRAULIC CONTROL VALVES — CATALOG 200-4
- HYDRAULIC CYLINDERS — CATALOG 200-2; ALSO 40-2
- HYDRAULIC POWER UNITS — CATALOG 200-1
- SURE-FLOW COOLANT PUMPS — CATALOG 62

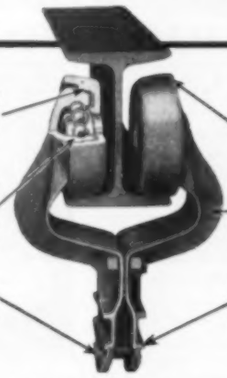
Let Logan Engineers help you design your Air and Hydraulic Circuits.

Logan *Air and Hydraulic Equipment*
LOGANSPORT MACHINE CO. INC. 811 Center Ave. Logansport, Ind.

FLUID POWER SPECIALISTS SINCE 1916

BREVITY—Identify by IEN - 12524 if you write the maker

Your conveyor dollars go farther with LINK-BELT trolleys



Effective sealing of wheel and bracket keeps out dust and dirt.

Raceways are induction hardened. High load capacity is based on entire assembly—not just on bearing.

Clevis pins are locked in bracket, cannot rotate. Bracket wear is minimized.

Wheels are drop-forged, internally machined to extremely close tolerances.

Rugged, one-piece bracket and clevis are drop-forged and heat-treated—fewer parts to maintain.

Trolley can replace other makes without disturbing chain's operating position.

LINK-BELT

LINK-BELT COMPANY: Chicago 8, Indianapolis 6, Philadelphia 40, Atlanta, Houston 1, Minneapolis 5, San Francisco 24, Los Angeles 33, Seattle 4, Toronto 8.

Write for Folder 2241-B.

BREVITY—Identify by IEN - 12525 if you write the maker

Get This Super-Handy HOIST and PULLER for 30-day Free Trial!

The *Jiffy Lift* Hoist & Puller weighs only 12 lbs., yet has ¾-ton capacity. Single control for up and down. Quick action, ratchet-type. Thousands of enthusiastic users. **$45.00 F.O.B. St. Louis.** Try it a month FREE!

BLACKBURN *Jiffy Lift*

Lightest! Simplest! Fastest!

HUNDREDS OF USES

MAIL COUPON TODAY

JASPER BLACKBURN CORPORATION
35 Madison St., St. Louis 6, Mo.

☐ Send us full information about "Jiffy Lift".
☐ Send us one "Jiffy Lift" for 30 Day FREE TRIAL.

Your Name and Title _____
Firm _____
Address _____
City and State _____ IEN

BREVITY—Identify by IEN - 12526 If you write the maker

SAVE TIME 4 WAYS WITH

HEINRICH
HANDNIB

Ask your Dealer for a demonstration.

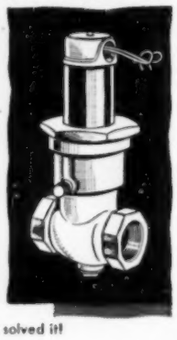
USE THIS HANDYMAN OF THE SHOP
FOR: ☐ OUTSIDE NIBBLING ☐ SHEARING
☐ INSIDE NIBBLING ☐ ROD CUTTING

● It's easy to cut irregular shapes with a Heinrich No. 4 Handnib. Double crank construction does the trick . . . enables tool makers to speed up cutting of templates and trial blanks. It's rugged . . . takes 3/16" flat stock with ease . . . round stock to 3/8". May be clamped in a vise or mounted on a bench. A request brings folder with full details.

NATIONAL MACHINE TOOL CO.
DEPT. 171-M RACINE, WISCONSIN

BREVITY—Identify by IEN - 12527 If you write the maker

ATKOMATIC
EXTRA RUGGED
ELECTRICALLY OPERATED VALVES



In thousands of installations . . . in this and other countries . . . Atkomatic Valves continue to give years of dependable, trouble-free service. That's because they are *extra rugged*—built to take more than you will demand. Compact and simple, they are made for pressures of one to 3,000 pounds. In your plant or on your product, you can count on ATKOMATIC. Send us your individual problem . . . maybe we've already solved it!

ATKOMATIC VALVE COMPANY, INC.
545 W. ABBOTT STREET, INDIANAPOLIS, INDIANA

Send For Literature

BREVITY—Identify by IEN - 12528 If you write the maker

GET YOUR COPY
of free booklet on unique, multi-purpose thermostat

Be among the many to benefit from unique performance of low-cost Fenwal THERMOSWITCH thermostats. Read all about them in free booklet available at no obligation to you. Learn how the Fenwal single-metal shell expands or contracts *instantaneously* with temperature changes, making or breaking totally enclosed electrical contacts. Used to control heat, pressure and other variables. Fast, accurate, sensitive.

Fenwal **THERMOSWITCH®**
The Precision, Multi-Purpose, Thermostat Control
SENSITIVE...*but only to heat*

FENWAL, INC., 712 Pleasant St., Ashland, Mass.
Los Angeles, California
Temperature Control Engineers
MAIL TODAY
Please send me the Fenwal booklet "Everything you want in a thermostat."
Name ..... Position .....
Company .....
Street .....
City ..... Zone ..... State .....

BREVITY—Identify by IEN - 12529 If you write the maker

TESTING . . Deep throat Brinell applies on steel plate riding conveyor

Source: STEEL CITY TESTING MACHINES INC.
8841-45 Livernois Ave., Detroit 4, Mich.

Throat depth is 24 in. in this new Brinell hardness-testing machine. It is assembled on wheels so the anvil and loading spindle can be moved into test position below and above steel plate carried on a conveyor. The machine is known as Model AP-1. It is available with correct anvil height to match a conveyor as specified by a prospective user. Distance between the ball penetrator and the anvil is 4 in. with the anvil in retracted position.

Control centers at a snap switch on the side of the housing. Turning it "on" brings the hydraulic anvil up in its cylinder to take pressure from the conveyor. At the same time the penetrator spindle moves downward to apply the 3,000-kg. load. Pressure is released when the switch is moved to "off" position. The anvil and the spindle retract ready for the next test. A motor-driven hydraulic pump in the housing supplies the required pressure. Dimensions are 41 by 19 inches. Weight is about 900 pounds.

BREVITY—Identify by IEN - 12530 If you write the maker

WOODWORKING . . Circular saw blade features wide spaced teeth, 6 to 16 in.

Source: WESTERN SAW MFRS. INC.
1838-42 W. Washington Blvd., Los Angeles 7, Calif.

Pacific Safti-Cut

Cutting teeth that project 0.02 in. above the edge of this new circular saw blade are spaced at wide intervals around the blade. The plain edge between the teeth controls the depth of cut, prevents overloading the teeth, practically eliminates danger of kick back.

The smallest blade, measuring 6 in. in diameter, is made of 18-gage nickel-chromium steel and carries 8 teeth. Recommended speed is 5,000 to 7,000 rpm. List price is $3.60. A 10-in. blade made of 16-gage steel is designed to operate at 4,500 to 5,000 rpm. It lists at about $6 with either 8 or 12 teeth.

BREVITY—Identify by IEN - 12531 If you write the maker

PAINTING . . Booklet of specifications on enamels, lacquers, primers for Government use

Egyptian Lacquer Mfg. Co.
Box 444-A, Newark 1, N. J.

Individual data sheets in new 24-page looseleaf booklet, "United States Government Specification Finishes", give the specification code number, description, colors, reducer data, and time required for air or bake drying. A copy is available without charge upon letterhead request direct.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58

BREVITY—Identify by IEN - 12532 If you write the maker

IT'S
1. A THERMOSTAT
2. A LIMIT CONTROL
3. A SWITCH

Robertshaw®
MODEL H-1
All-in-One

Combines in one unit a thermostat and limit control. It's a double pole, single throw controller with an auxiliary single pole, single throw switch that automatically cuts off all current and locks the switch at "open" whenever temperature exceeds the operating temperature range by as much as 7°F. in liquid or 12°F., in air. *Write for Catalog H-1.*

In home and industry . . EVERYTHING'S UNDER CONTROL

Robertshaw THERMOSTAT DIVISION
ROBERTSHAW-FULTON CONTROLS COMPANY
YOUNGWOOD, PENNSYLVANIA

BREVITY—Identify by IEN - 12533 If you write the maker

RAILS AND TRACK ACCESSORIES

"FASTER FROM FOSTER"

Buy Rails and Track Accessories from a reliable single source—to save time and money. L. B. Foster's large warehousing operations provide dependable delivery of all your trackage needs—new installations or replacements. We'll meet your exact requirements. All material is rigidly inspected before shipment and is backed by Foster's Guarantee.

Write for Rails & Track Accessories Catalog IE-8

STEEL SHEET PILING • PIPE • WIRE ROPE

L. B. FOSTER CO.
PITTSBURGH 30, PA. NEW YORK 7, N.Y.
CHICAGO 4, ILL. HOUSTON 2, TEX.

BREVITY—Identify by IEN - 12534 If you write the maker

DRILL ANY SIZE HOLE IN ANY MASONRY MATERIAL
with Carbide Tipped

Cyclo-Core FOR HARD CONCRETE using rotary type drill with pressure applied.

Drills holes ¾" dia. and up. Removable Cyclo-Center accessory allows precision locating and starting of hole without use of wooden template.

Cyclo-twist FOR SOFT and MEDIUM MASONRY MATERIALS using electric rotary drill, drill press or hand brace.

Drills holes 3/16" to 1" dia. up to 36" deep. Dust removing spiral flutes run from cutting edges to shank end.

Thunderbolt FOR HARD or VERY HARD MASONRY MATERIALS using electric or pneumatic hammer

Drills holes 3/16" to 1¾" dia. up to 18" deep. Carbide tip withstands shock and wear. Taper proportioned to withstand crystallization.

SEND FOR NEW MASONRY DRILL BIT GUIDE — "Helps you choose the RIGHT bit for EACH job."

New England Carbide TOOL CO., INC.
60 BROOKLINE STREET, CAMBRIDGE 39, MASS.

BREVITY—Identify by IEN - 12535 If you write the maker

NEW PORTMAN "century"

OPTICAL COMPARATOR
Vertical Model C-100

Latest accomplishment of a progressive producer with long, broad experience in microprojection optics . . .
FEATURING:
1) "Super-Light" condenser lens, power cooled.
2) Portman "Ciptar-Scope" precision optical system provides maximum illumination with sharpest definition . . for large optical capacity.
3) Focal length average in excess of 3 inches.
4) Magnifications: 10x, 20x, 25x, 31½x, 50x, 62½x and 100x are standard.
5) Large 16-inch diameter "Sight-Line" screen.
6) New "Swing-Away" stage (removable, also provides helix angle positioning.
7) Rugged chassis assures permanent alignment.

The Portman "Century" is the ideal optical comparator for the tool room, for gage inspection and for production shop work. Write or wire for details.

Territories open for agents with gage and measuring equipment sales experience.

PORTMAN INSTRUMENT COMPANY
Manhasset Avenue, PORT WASHINGTON, N. Y.

BREVITY—Identify by IEN - 12536 If you write the maker

CONVENIENT LOW COST ACCURATE

OXYGEN and CO_2 Analysis

FYRITE Gas Analyzer shown at the left is available in two models—one for direct CO_2 analysis, the other for direct oxygen analysis. Both instruments employ the volumetric method of gas analysis involving selective absorption of CO_2 or oxygen by a chemical absorbent. A complete analysis can be made in 40 seconds. Accuracy is within one-half of one per cent CO_2 or oxygen. Absorbing fluids are furnished in individually bottled refills, and replacement of the fluid in the instrument merely requires removing the four screws that hold the cap assembly in place.

Write for Leaflet I-700

Available Individually or As A Set

FYRITE Gas Analyzers can be supplied individually—in a metal instrument chest complete with rubber aspirator, rubber and metal sampling tubing and filter, as shown at the right; or in a "Duplex Kit" which comprises both CO_2 and Oxygen Analyzers together with one complete gas sampling assembly for connecting either instrument to the desired sampling point.

BACHARACH Industrial Instrument Company
7000 Bennett Street • Pittsburgh 8, Pa.

BREVITY—Identify by IEN - 12537 If you write the maker

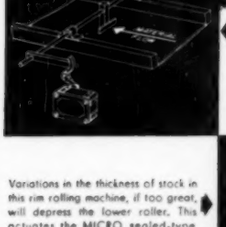
There's a MICRO Precision Switch to make your operations safer and more automatic

It's easy to apply MICRO precision switches to your present equipment. They are available in a wide variety of housings, mountings and actuators that permit quick and convenient installation.

On this page we illustrate three different uses of three different MICRO products which have resulted in making equipment safer and more automatic.

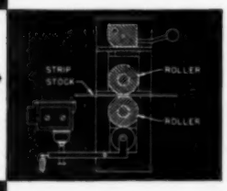
There are MICRO precision switches that will make your old equipment more productive by the addition of a new automatic control, a new safety limit or a new warning signal.

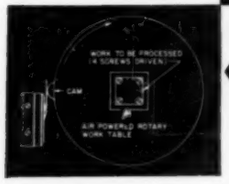
Look in your classified telephone book for your MICRO SWITCH Distributor. They are located in over 120 cities to serve you.



To prevent overloading a belt conveyor feeding a bucket elevator, a paddle was set at the maximum material depth on the conveyor. Overfeeding the belt moves the paddle and trips the MICRO Explosion-Proof Switch, stopping the conveyor motor and sounding an alarm.

Variations in the thickness of stock in this rim rolling machine, if too great, will depress the lower roller. This actuates the MICRO sealed-type switch which shuts off the motor before damage can be done to rolls, shaft or bearings.





Leaf-actuated MICRO precision switch is actuated by cam on air-powered rotary work table so as to break the current and stop the table at the exact "home" position before the next cycle is started.

What is a new plant idea worth? *Read "MICRO TIPS"*

"MICRO TIPS" is a real gold mine of ideas on how to make plant equipment more productive. Send for your copy today. You'll be glad you did.

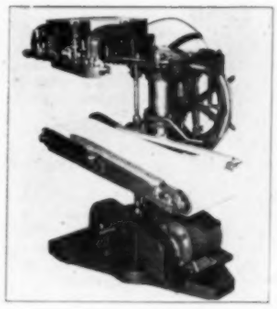
MICRO MS SWITCH
Freeport, Illinois

A Division of Minneapolis-Honeywell Regulator Company

BREVITY—Identify by IEN - 12539 If you write the maker

PACKAGING . . Bag closing machine for 2 to 100 lb. filled paper bags

Source: HAMER MACHINE CO.
6415-19 Cambridge St., St. Louis Park, Minn.



It gathers and binds

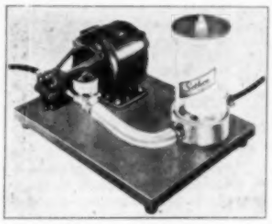
Filled paper bags of open-mouth design are fed to the short belt-conveyor section on the front of this new machine. Converging chains gather the top as the conveyor moves toward the left to a point where a winding head places and tightens a ring of wire cut from a supply reel. The closure gathers the bag to provide a top by which it can be gripped and handled. It holds against seepage of powders.

The machine itself has been manufactured for the company on a contract basis for a number of years and is in widespread service. Five new models now are in production in the company's own plant. The smallest will handle from 2 to 5-lb. bags and the largest from 5 to 100-lb. bags. Capacity is 1,100 to 1,700 bags per hr. weighing 10 lb., depending upon the conveyor set-up. Illustrated description is presented in a new 4-page bulletin, "Minneapolis Bag Closing Machine".

BREVITY—Identify by IEN - 12540 If you write the maker

FILTERING . . Cartridge type unit pump equipped for lubricating liquids

Source: SETHCO
105-09 150th St., Dept. IEN, Jamaica 4, N. Y.



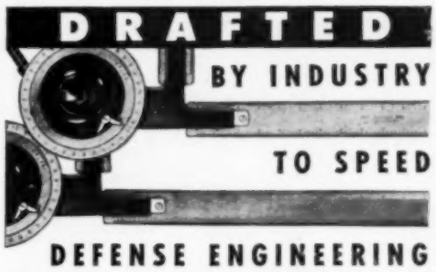
Capacity is 70 gph. with the pump motor rating ⅙ hp. for operation on 110-volt 60-cycle single-phase ac. in this new Model LGI-5 liquid filter. Operation is at pressures to 40 lb. at which point a by-pass on the aluminum-body gear pump returns the liquid to the inlet side of the pump.

The filter cylinder measures 4¾ in. in outside diameter by 8½ in. in height. It is equipped with a transparent lucite housing in standard construction so the filtering action can be observed. The element is a removable cartridge consisting of processed cotton yarn wound on a stainless-steel support core. It can be cleaned and used repeatedly by back washing with solvent. Stainless steel or an ordinary steel body can be specified in place of the lucite. Filter elements made of porous stone or carbon also are available.

The assembly is a new addition to the company's previously developed line of similar equipment. It is designed particularly to filter light oils, fuel oil, glycerine, glycol in applications that require pumping of small volume at the relatively high pressure.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 12541 If you write the maker



DEFENSE ENGINEERING

Harried engineering staffs in thousands of plants are using Universal Drafting Machines and Duraline Scales to speed ideas through the drawing stage and into faster production.

For fifty years, Universal, the pioneer drafting machine, has remained the leader in accuracy—in ease of operation—in years of dependable service rendered. It combines into one fine, time-saving instrument most of the loose tools of the draftsman's art. It is adaptable in the field to any board.

And every Universal "Boardmaster" becomes a better instrument when equipped with the new Duraline Scales. These scales, made of aluminum, ground from the solid, are the last word in accuracy because they are engine divided at 70° F. They are easy on the eyes—no glare—large numerals, and they will not smudge paper—will not file the pencil point.

Ask your drawing material dealer about these two time and money saving tools, or write direct for descriptive bulletins.

UNIVERSAL DRAFTING MACHINE CORPORATION
7960 Lorain Avenue • Cleveland 2, Ohio

UNIVERSAL
DRAFTING MACHINE — DURALINE SCALES

BREVITY—Identify by IEN - 12542 If you write the maker

Get the Motor that Cleans Itself

MOTOR CLEANING operations are reduced . . . maintenance costs are lower than ever before with the new Allis-Chalmers tefc motor. Here's why! Concealed air passages have been eliminated; dirt cannot build up to cause overheating. Cooling air is blown over the ribbed cast iron frame and bearing housings — carrying dirt away with it. Oily dirt that sticks can be wiped or blown off.

This new motor built in all NEMA standard frame sizes from 224 to 505. Also in explosion-proof type. Get Bulletin 51B6144 from your A-C Authorized Distributor or District Office, or write Allis-Chalmers, Milwaukee 1, Wisconsin. A-3463

ALLIS-CHALMERS

BREVITY—Identify by IEN - 12543 If you write the maker

ELECTRIC

TACHOMETERS

Simplified RUGGED Design

HAND MODEL

Small size and light weight — ideal for any shop and production test application. Precision made, sealed ball bearings, and the elimination of wearing parts assure constant accuracy. Models from 0-2,400 RPM + 500 FPM, 5,000, 15,000, and 25,000 RPM. $42.50 and up.

PORTABLE MODEL

Measures any rotating speed with sustained accuracy for production and laboratory use. Three-range expanded scale: 0 to 1,000; 1,000 to 2,500; 2,500 to 5,000 and other models up to 20,000 RPM. Stability assured with no contacts, brushes or batteries to wear out. Accuracy ½, 1 or 2% or full scale. $71.00 and up.

MOUNTED MODEL

Non-directional or indicating forward or reverse speeds in any required range up to 25,000 RPM. Available with SAE fittings and base mount. Calibrated to your exact needs. Completely enclosed and protected against moisture and dirt. $43.00 and up.

Special models made for any specific requirements

ELECTRO-MECHANO CO.
269 E. Erie St., Milwaukee, Wis.

BREVITY—Identify by IEN - 12544 If you write the maker

Delpark FULL-FLOWING SELF CLEANING COOLANT FILTERS

FOR SOLUBLE OILS and CUTTING OILS

A gravity filter, complete and continuous filtration of the coolant removes heat-bearing solids as it comes from the work. More uniform limits, better finish, and greater accuracy are maintained with a clean wheel and lower coolant temperature.

Compare these points with your present coolant system:

- **Keeps wheel clean for faster, more accurate cutting and longer life.**
- **Less wheel dressing required.**
- **Uniform coolant temperature.**
- **Limits more easily maintained.**
- **Extended coolant life.**
- **No down time for de-sludging reservoir.**
- **Less wear on coolant system.**

These are but a few of the many advantages offered by Delpark Full-Flowing, Self Cleaning Coolant Filters. For more complete information:

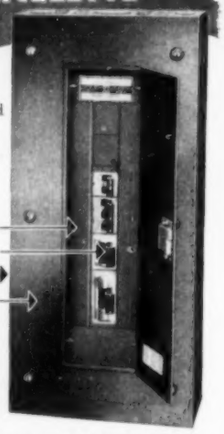
Delpark
INDUSTRIAL FILTRATION
Backed by 30 Years Experience in Industrial Filtration

INDUSTRIAL FILTRATION COMPANY
517 Industrial Avenue • Lebanon, Indiana

BREVITY—Identify by IEN - 12545 If you write the maker

SQUARE D's

MHP DISTRIBUTION PANELETTE *



* a **Panelette** is an Underwriters' Approved Panelboard packaged in component form for flexibility in stocking and *"Off-the-Shelf" Delivery.*

for 240 Volt, 3 Phase, 3 or 4 wire power systems.

Write Square D Company, 6060 Rivard St., Detroit 11, Mich., for descriptive bulletin

ASK YOUR ELECTRICAL DISTRIBUTOR FOR SQUARE D PRODUCTS

SQUARE D COMPANY

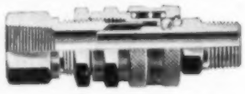
DETROIT · MILWAUKEE · LOS ANGELES

BREVITY—Identify by IEN - 12546 If you write the maker

HANSEN

QUICK-CONNECTIVE STEAM COUPLINGS

WORKING PRESSURES TO 350 POUNDS



Sectional View of High Pressure Steam Coupling Showing Smooth Unrestricted Bore.

• Slight movement of sleeve instantly connects or disconnects couplings. Two types available—Low Pressure (1/4") for pressures up to 40 psi. ga. (saturated)—and High Pressure (1/4" and 1/2") for pressures up to 350 psi. ga. saturated and 3/4" for pressures to 250 psi. ga. saturated).

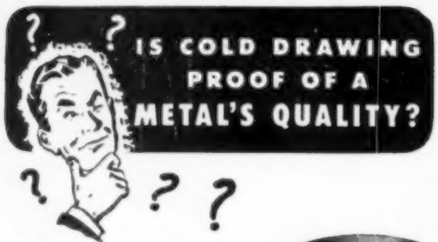
Easily repacked with formed graphite and asbestos packing. High Pressure Couplings designed for easy take-up while in service. Machined from solid brass bar stock.

Also general purpose one-way shut-off, and two-way shut-off couplings. Write for catalog.

THE HANSEN MANUFACTURING COMPANY

4311 WEST LORAIN STREET · CLEVELAND 11, OHIO

BREVITY—Identify by IEN - 12547 If you write the maker



YES! Cold drawing is in itself certain proof of the quality of a metal. Unless it is perfectly homogeneous, without blisters, laminations or surface defects, it will break down under the drawing operation.

What's more, a Hackney Cold Drawn Shape or Shell is made by specialists in cold drawing. For more than 45 years Pressed Steel Tank Company has been giving customers such exclusive advantages as: decreased overall weight, greater strength, faster production, greater durability, improved appearance and lower costs. If you would like further details on Hackney Shapes and Shells, write us.

Typical examples of Hackney Cold drawing in special inverted shell, 22" dia. at open end, 16" high. Used as part of centrifugal separator.

Hackney

PRESSED STEEL TANK COMPANY

Manufacturers of Hackney Products

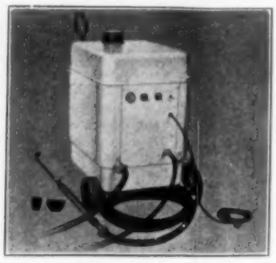
Main Office and Plant 1449 So. 66th St., Milwaukee 14. 1322 Vanderbilt Concourse Bldg., N. Y. 17 • 253 Hanna Bldg., Cleveland 15 • 936 W. Peachtree St., N. W., Room 136, Atlanta 3 • 3 LaSalle St., Room 786, Chicago 4 • 577 Roosevelt Bldg., Los Angeles 14

CONTAINERS FOR GASES, LIQUIDS AND SOLIDS

BREVITY—Identify by IEN - 12548 If you write the maker

CLEANING . . Steam spray machine takes steam pressure from a shop line

Source: HOMESTEAD VALVE MFG. CO. P. O. Box 550-A, Coraopolis, Pa.



No fire, no fumes

Fireless designates new machine in the company's Hypressure Jenny steam-spray equipment line. The new assembly takes steam pressure from a shop line instead of generating its own. It mixes the steam with positive pumped proportions of water and cleaning solution to produce a spray to clean, deodorize, rinse, sanitize. Operation is on 60 to 150-lb. steam pressure. Connections can be made to lines carrying higher pressure by employing a regulator. Delivery capacity is 45 to 90 gph. of chemical-vapor spray.

The machine mounts a solution tank holding 26 gallons. It delivers the solution by a motor-driven pump through a nozzle equipped gun at the end of a 25 ft. length of hose. Dimensions are 37 by 27 by 37 inches. Assembly is on 7-in. wheels.

BREVITY—Identify by IEN - 12549 If you write the maker

VENTILATING . . Centrifugal blower, 12 to 16 in., for outdoor installation

Source: TRANE CO. 2017 Cameron Ave., La Crosse, Wis.

Weatherproof design

Arrangement 10 designates new assembly in the company's line of centrifugal blowers in single-width single-inlet design in which a hood is provided for the motor for outdoor installation. Sizes range from 12 to 60 in. in impeller diameter. Both forwardly-curved and backwardly-inclined designs are included in the impeller line. Overall dimensions with the housing set for bottom horizontal discharge is 23¾ to 103⅜ in. front to back and 26 to 116 in. in height. Overall width is about 51 to 126 in. for the line of equipment.

BREVITY—Identify by IEN - 12550 If you write the maker

ALUMINUM . . Color sound film details aluminum production from the raw bauxite

Reynolds Metals Co.
2502 S. 3rd St., Louisville 1, Ky.

Up-to-date applications are included in revised edition of the company's motion picture, "Pigs and Progress", previously reviewed IEN-2872-48. The non-technical picture story starts with the mining of bauxite, shows its reduction into aluminum, mill operations into products, fabrication into a variety of products such as foil. Running time is 26 min. for the 16-mm. film. It is available on loan.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 12551 If you write the maker

the new APCO TORQUE WRENCH "CLICKS"

No. PF 50
0-600 inch lbs.
Length 13"
Weight 1½ lbs.

. . . warns worker when preset tension is reached!

Apco Tension Drivers, available in four standard sizes. 0-25, 0-6, 0-12, 0-80 inch lbs. Interchangeable heads on two largest sizes.

Simplifies mechanical operations and eliminates "guesswork" on assembly and maintenance work — particularly in hard-to-get-places—wherever nuts, bolts, and studs require specific tensioning. Made with dial for accurate preset tension, this wrench makes a distinctly audible "click" when preset torque is reached. Unaffected by temperature change or jarring, guaranteed accurate. Apco Torque Tools—made of heat-treated nickel steel—are available in both visible and preset dial models—in sizes from zero to 280 inch grams., up to 2,000 ft.-lbs.

SEND FOR DESCRIPTIVE FOLDER TODAY!

APCO MOSSBERG CO.
161 LAMB ST., ATTLEBORO, MASS.

BREVITY—Identify by IEN - 12552 If you write the maker

SAFETY IS THE BEST POLICY IN LOAD BINDERS

THE CANTON "TAKE-UP" ACTION picks up slack, binds in one operation. Design and heavy duty construction eliminates spread or release while in operation. Each factory tested, guaranteed for specified capacities. 7 sizes from 4,000 to 35,000 lb. rating, priced $3.00 to $14.80. Continuous action makes them a versatile tool in steel, lumber, machinery hauling, logging, oil fields, rigging. Two sizes made without take-up feature.

POPULAR AMERICAN FORGE *RATCHET* LOAD BINDERS

COMPLETE SAFETY IN TIGHTENING, BINDING, RELEASING LOADS . . . versatile "turnbuckle" principle has wide range of application. One man easily operates without aid of extension pipe; no kick-backs, full 8" take-up. 3 sizes, $14.90 to $18.10. Special size ideal for trueing steel work on building construction.

CANTON CAST PRODUCTS CO.
Maker of Cancap Exhaust Protectors
2404 13th St., N. E. • Canton 5, Ohio

BREVITY—Identify by IEN - 12553 If you write the maker

the *New* SAF-I-DUO SAFETY GOGGLE

With Replaceable Lens

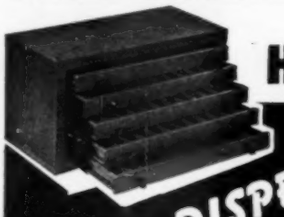
- Velvety Comfort — VINYL frame fits contour of all faces snugly.
- Lens of Optically Correct OPTILITE or *Acid-resistant* plastic.
- Maximum protection from Impacts, Chemicals and Dust. (Four types of ventilation.)
- Economical — one-piece replacement lens at low cost. (Lens interchangeable with SAF-I-SPEC.)
- Can be worn over prescription glasses.

Write for literature and prices.

UNITED STATES SAFETY SERVICE CO.
KANSAS CITY 6, MO. • BRANCHES IN PRINCIPAL INDUSTRIAL CITIES

In Canada — PARMELEE LTD., 11 Watkinson Ave. — Toronto 9

BREVITY—Identify by IEN - 12554 If you write the maker



HUOT DRILL DISPENSER

No More Rummaging Through Stacks of Drills

No more running out of drills—your entire stock can be seen at a glance. Each size of drill has its own compartment with rounded bottom for easy selection. You can store dozens of small drills and several large ones in their own compartments. Built-in pricing or inventory system eliminates the need for cost sheets, and will keep a record of drills on hand. *Specifications:* 14½" long, 7¼" high, 7¼" deep. Hammerlin baked enamel finish over rugged steel. Made in three models for fractional, number or letter drills.

Write for Circular

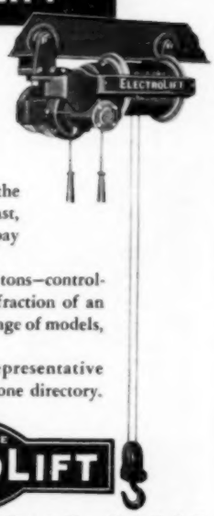
By the makers of HUOT DRILL INDEX

HUOT MANUFACTURING CO.
565 No. Wheeler St., St. Paul W4, Minn.

BREVITY—Identify by IEN - 12555 If you write the maker

GET A LIFT WITH ELECTROLIFT

worm drive hoist



Get the *one* hoist with *all* the advantages: smooth, quiet, fast, safe, and so economical it'll pay for itself in a hurry.

One man handles up to 6 tons—controlling the load to the merest fraction of an inch by push button. Wide range of models, for any use.

Call your ElectroLift representative listed in the classified telephone directory. Or write to:

WORM DRIVE ELECTROLIFT HOISTS

ELECTROLIFT, INC., 30 Church Street, New York 7, N. Y.

BREVITY—Identify by IEN - 12556 If you write the maker

THEY CUT AND CUT AND CUT

Every **JOHNSON METAL CUT-OFF BAND SAW**

is a BEAR for WORK and Lasts Indefinitely

MODEL J cuts 10" rounds, 18" flats. Available as a wet or dry-cutting machine.

When you buy a Johnson Band Saw you can be sure it will stand up and deliver constant service year after year. Johnson Saws are ruggedly built from the best standard parts available. They are adaptable to any cutting job, requiring only a minute's time to change from light to heavy stock. For extra capacity, accuracy, speed and economy, insist on Johnson with its many outstanding features.

MODEL B smaller machine shown at right . . . Does a man-size job. Cuts 5" rounds, 10" flats. Furnished with or without casters. Really portable, can be taken anywhere for on-the-job cutting.

THERE IS A DEALER NEAR YOU

JOHNSON MANUFACTURING CORP.
ALBION, MICHIGAN

BREVITY—Identify by IEN - 12558 If you write the maker

HOSE FITTING . . Coupling for quick connect and disconnect

Source: OPW CORP.
2735 Colerain Ave., Dept. IEN, Cincinnati 2, Ohio

Ask for Bulletin F-3

Kamlok trade names new assembly of cam-equipped coupler and adaptor body for use in hose lines such as those employed in handling fuel oil. Two cams in the coupler body are integral with levers and lift rings. The cams engage a groove in the adaptor body to draw the coupler up against the adaptor end and compress a sealing gasket. Sizes from ¾ to 3 in. are made of bronze, the 4-in. unit of aluminum.

All sizes are available with male or female threaded ends and with nipple shanks for insertion and clamp assembly in a hose line. There is also an elbow coupler containing a check valve and various accessory fittings such as a nozzle tube, chain-equipped cap and adaptor unit.

BREVITY—Identify by IEN - 12559 If you write the maker

RUBBER . . Silicone diaphragms, gaskets, seals, parts to specification

Source: H. O. CANFIELD CO.
189-93 Housatonic Ave., Bridgeport 4, Conn.

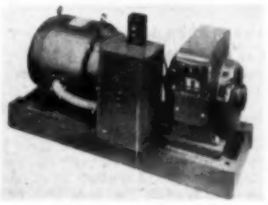
Send your blueprints

New facilities have been installed by the company that enable it to offer a new contract service in molding, extruding, die cutting silicone materials to produce diaphragms, gaskets, seals. The silicone remains serviceable in a temperature range between minus 100 and plus 500 deg. F. It can be molded, extruded, laminated, calendered or sheeted. It can be made to adhere to most metals, glass, ceramics and to itself. Dielectric properties are excellent.

BREVITY—Identify by IEN - 12560 If you write the maker

GENERATOR . . Motor driven assembly to produce 180 and 360 cycle ac.

Source: ELECTRIC MACHINERY MFG. CO.
821 2nd Ave. S. E., Minneapolis 13, Minn.



Any rating to order

Illustrated is a new 6-kw. motor-generator set with a 60-cycle ac. driving motor operating at 3,600 rpm. to produce 360-cycle ac. output. The set is self-exciting and includes built-in regulation to hold voltage constant on the load. The assembly is designed particularly to supply driving current for high-cycle portable electric tools in production use.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 12561 If you write the maker

POSITIVE GRIPS

THE "HAMMER-LOCK" *and* *Electroline* FITTINGS

The "Hammer-Lock" has long been a favorite grip of wrestlers. But just as popular, in Industry, is the Electroline Fitting . . . these safe, economical, permanent wire-rope connectors may be installed by unskilled labor in a matter of minutes with ordinary mechanic's tools.

Electroline Fittings slash re-roping costs—and prolong wire-rope life by damping vibration stresses and overcoming rope fatigue at entrance to the fitting. Send for catalog describing "positive-grip" Electroline Fittings!

Electroline Company
4121 SOUTH LA SALLE STREET
CHICAGO 9, ILLINOIS
IN CANADA: POWERLITE DEVICES, LTD. TORONTO

BREVITY—Identify by IEN - 12562 If you write the maker

CONTROL POWER BETTER

ROCKFORD CLUTCHES

BREVITY—Identify by IEN - 12563 If you write the maker

The CHEAPEST Way

TO KEEP COSTLY MOTOR BURNOUTS DOWN...

Specify and Use Motors with Built-in KLIXON Protectors

Motor burnouts are costly. They result in motor repairs or replacements, high maintenance costs and production slowdowns. Klixon Protected motors are your solution to eliminating this problem.

Built-in as an inherent part by the motor manufacturer, the Klixon Protector saves money and reduces idle machine time by preventing the motor from burning out. This means that you have less equipment shutdowns, less motor repairs and replacements . . . all adding up to substantial savings.

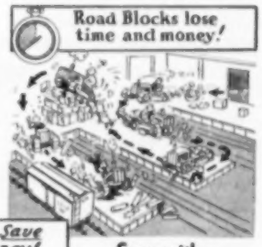
However, remember that all motors do not come protected . . . and the only way to be sure that your motors are equipped with Klixon Protectors is to specify on your motor purchase order "motors with built-in Klixon Protectors." This will guarantee that the motor you buy and receive will be positively protected against motor burnouts.

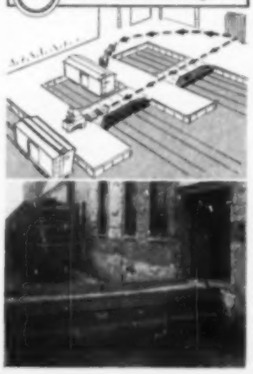
As a user of electric motors, you can keep production moving, cut down motor upkeep to a minimum by ordering and using motors with built-in Klixon Protectors. The additional cost is low . . . pays dividends day in, day out.

KLIXON **SPENCER THERMOSTAT**
Division of Metals & Controls Corp.
212 Forest St., Attleboro, Mass.

BREVITY—Identify by IEN - 12564 If you write the maker

ROAD BLOCKS? CLEAR DOCKS?





Save with a WHITING CROSS-OVER BRIDGE

You can save money—you can save time—and you can speed up materials movement from dock-to-dock with Whiting Cross-Over Bridges. Designed in three general types (Overhead-Rise—Ground-Level—and Roll-Away).

Pictured at the left, a Roll-Away, Cross-Over Bridge ideally suited for a single span of track between building and platform dock. It is lowered approximately twelve inches and rolled under the dock when not in use.

Write for Bulletin MS-C-400 and learn how these practical Cross-Over Bridges fit your materials-movement requirements. Whiting Corporation, 1363 Lathrop Ave. Harvey, Illinois.

BREVITY—Identify by IEN - 12565 If you write the maker

Air or hydraulic power—applied by T-J Cylinders—gets an amazing lot of tough jobs done for industry . . . *faster, more efficiently,* and at *lower cost!* Use T-J Cylinders for a wide range of pushing, pulling, lifting, clamping or control jobs . . . 100 lb. or 50,000 lb. Many standard sizes and styles . . . both cushioned and non-cushioned types . . . precision-built, dependable. Write . . . The Tomkins-Johnson Co., Jackson, Mich.

35 YEARS EXPERIENCE

TOMKINS-JOHNSON

BREVITY—Identify by IEN - 12566 If you write the maker

Topping them all!

52% OF ALL GAS-POWERED FORK TRUCKS

40% OF ALL ELECTRIC-POWERED FORK TRUCKS

ordered in the first 6 months of 1951 were CLARKS! In 1950 Clark sold—50% of all gas-powered fork trucks . . . 26% of all electric-powered fork trucks . . .

This steadily-rising sales curve (or trend) clearly reflects consistently-lowered materials-handling costs effected by Clark machines. The fact that more and more Clark machines go into the hands of more and more satisfied customers every day is your positive assurance of Clark's superiority.

Find out how you, too, can save money and time by the use of Clark equipment. Fill out the coupon—mail it today!

CLARK ELECTRIC AND GAS POWERED FORK TRUCKS

AND POWERED HAND TRUCKS • INDUSTRIAL TOWING TRACTORS

INDUSTRIAL TRUCK DIVISION • CLARK EQUIPMENT COMPANY • BATTLE CREEK 49, MICHIGAN

Please send the following: ☐ SAFETY SAVES ☐ BASIC FACTS ☐ CONDENSED CATALOG ☐ MOVIE DIGEST

Name _____

Firm Name _____

Street _____

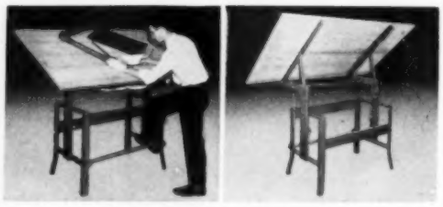
City _____ Zone _____ State _____

AUTHORIZED CLARK INDUSTRIAL TRUCK PARTS AND SERVICE STATIONS IN STRATEGIC LOCATIONS

BREVITY—Identify by IEN - 12568 If you write the maker

DRAFTING . . Steel table mounts adjustable soft wood top

Source: EMRICK INC.
1791 Clinton Ave., Kalamazoo, Mich.



List price is $125

Sugar-pine top assembled with tongue-and-groove joints is supported on steel arms in hinged arrangement in this new Stay'Ble table. The base is made of structural steel with a vertically adjustable foot rest. It carries vertical slides at its two sides for table support and an adjustable height between 33 and 47 in. above the floor. The board measures 42 by 72 inches. The base measures 25½ by 42 inches. Tilting range is to 50 degrees. Weight for shipping, knocked down, is 146 pounds. List price is $125.

BREVITY—Identify by IEN - 12569 If you write the maker

PROTECTING . . Film badge service reads worker exposure to radiation

Source: TECHNICAL ASSOCIATES INC.
138-42 W. Providencia Ave., Burbank, Calif.

Workers wear it

New service has been established by the company to supply manufacturers with film-enclosing badges for workers who are exposed to radiation. Each week the badges are returned to the company for processing and a new set is sent out with a report of the findings for the previous week.

The badge is made of aluminum. It measures 1½ by ¼ by 2 inches. A wrist badge holder and a film ring also are available. Minimum service order is for 13 weeks. One or more badges can be ordered per week. Price of the service varies with the number.

BREVITY—Identify by IEN - 12570 If you write the maker

CONTROLS . . Textbook on industrial controls deals in particular with automatic feedback control

McGraw-Hill Book Co.
327 W. 41st St., New York 18, N. Y.

Theoretical basis and practical applications are given by new 426-page book, "Automatic Feedback Control", on equipment for industrial control. Authors are William R. Ahrendt and John F. Taplin. List price is $7.50. The book includes a presentation of the mathematics involved, design considerations, analysis of control methods, servomechanisms, pneumatic controls, temperature regulations, speed governing, controls for pressure, flow and liquid level, typical problems.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 12571 If you write the maker

ORDER SEWALL SPROCKETS right out of the catalog

If your product calls for any of these roller chain sprockets as diagramed, the new Sewall Stock Sprocket Catalog can save you time and money. *May we send you a copy?*

Sewall sales engineers will welcome your inquiry on any type of custom-built cut tooth gears . . . racks . . . sprockets. *Service Offices in St. Paul and Chicago.*

St. Paul: NEstor 1381

E. B. SEWALL MANUFACTURING CO.
686 Glendale St. • St. Paul 4, Minnesota

BREVITY—Identify by IEN - 12572 If you write the maker

easy-to-handle ROTOR CHIPPERS "PAID OFF" in 45 days

JOB: Removing fins from pressframe casting. Former chippers weighed 13½ lbs. . . . were slow-hitting, hard to handle.

SOLUTION: Rotor Application Engineer recommended new Model C-15H Chippers. Weigh only 11½ lbs. Have plenty of high-speed sock.

RESULTS: Stepped up production 65%. "Paid off" new Rotor Chippers in 45 days.

Unusual? Not at all! We will gladly survey your plant for similar benefits. Why not call us in?

Ask for Catalogue No. 37. AIR O'TOOL

THE ROTOR TOOL CO.
CLEVELAND, OHIO

BREVITY—Identify by IEN - 12573 If you write the maker

TEMPERATURE CONTROL

Operates in five ranges of 150, 350, 450, 650 & 1000 deg. F.

Model Z—Temperature control for baking ovens, air heaters, plastic molding presses, soft-metal melting pots and similar devices heated by gas, electricity or oil. Calibrated and uncalibrated models for five temperature ranges: 150, 350, 450, 650 and 1,000 deg. F. Equipment includes thermostatic element with 5 ft. capillary tubing. Longer tubing to specification.

The control unit contains a Micro switch with normally-closed, normally-open or single-pole double throw contacts. On the housing face is a temperature-setting knurled knob and porcelain-enameled dial. Conduit connection is on top of the housing. The cover, front and sides can be removed without disturbing setting or wiring. Overall dimensions are 6 in. in height by 3 in. in depth.

Control circuit capacity is 500 watts ac, 50 watts dc. The thermostatic element is interchangeable, can be replaced on the job, and is furnished for a variety of applications.

List price for two-wire design is $40 to $47 for uncalibrated element ranges, $45 to $52 with calibrated elements. The 3-wire design ranges from $45 to $52 and from $50 to $57.

Send for Bulletins 505-I and 505-J

THE PARTLOW CORPORATION
4 Campion Road **New Hartford, N. Y.**

BREVITY—Identify by IEN - 12574 If you write the maker

NEW HIGH SPEED STEEL DRILL ROD

ACE DRILL CORP. ADRIAN, MICHIGAN

Write today for Leaflet and Sample!

BREVITY—Identify by IEN - 12575 If you write the maker

Sheehan's TWO-PLANE PRESS CONVEYORS SENSATION at CHICAGO SHOW

Here's the revolutionary Sheehan Model B Press Conveyor, equipped with a Flat-Wire Metal-Mesh Belt, that has Material-Handling men talking and marvelling at its performance. Think of it—at the loading end, top of belt is actually within 8 inches of floor, and with unusual two-plane design, conveyor can go under the back of presses, thereby saving working space and minimizing need for cumbersome chutes. Use of positive-drive sprockets in load-center of flat-wire belt, assures no belt slippage—oily conditions included.

LOWER-COST LONGER-LIFE
Sheehan Press Conveyors Can Solve Your Press Room Problems!

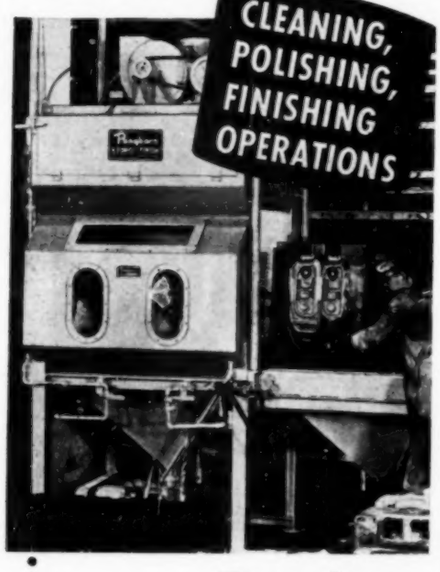
Investigate the many construction and safety features that make Sheehan Press Conveyors outstanding in performance and economy!

Write today for literature on sizes, special applications and cost data. You will be surprised at Sheehan's high quality and low prices.

R. T. SHEEHAN CO. PLYMOUTH, MICH.

BREVITY—Identify by IEN - 12576 If you write the maker

SPEED UP



Pangborn

Hydro-Finish is versatile! Use it to speed up cleaning, polishing and finishing of molds and dies as well as production line work.

Hydro-Finish saves you time, labor and money. Scale and discoloration are removed in *minutes* instead of hours. Cleaned surfaces are virtually free of directional grinding lines. Costly hand work is greatly reduced. No danger of excessive metal removal because tolerances are held to .0001". Fine mesh abrasives suspended in water do a precision job.

Find out how Pangborn Hydro-Finish improves product quality, increases tool and die life! For full details, write today for Bulletin 1400A to: PANGBORN CORPORATION, 2300 Pangborn Blvd., Hagerstown, Md.

Look to Pangborn for the latest developments in Blast Cleaning and Dust Control equipment.

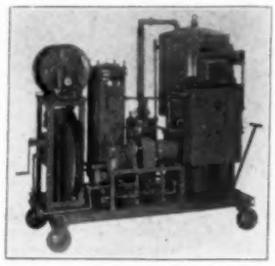
Pangborn

BLAST CLEANS CHEAPER
with the right equipment for every job

BREVITY—Identify by IEN - 12578 If you write the maker

OIL CONDITIONING . . Filter unit and vaporizer to remove oil impurities

Source: HILLIARD CORP.
98 W. 4th St., Elmira, N. Y.



Particularly for hydraulic oil

Model 50-X is a new assembly in the company's Hilco Hyflow line of oil-conditioning equipment for periodic treatment of hydraulic oil. The unit removes suspended solids, products of oxidation and water. It is mounted for mobile application in a plant with connections for electric power and a suction and return hose to lead out of and back into the oil sump in a machine employing hydraulic oil.

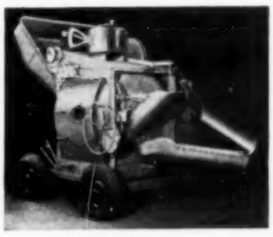
Dirty oil is withdrawn from the sump and is pumped through a filter for solids removal and then through the vaporizer to remove moisture. From here it is returned through a clean-oil hose to the sump. The filter employs the company's Hillite, treated fuller's earth, or Hiltex, a fine cellulose fibre material. The former is recommended for use with mineral or synthetic oils and the latter for inhibited oils.

Filter and vaporizer are electrically heated with thermostat control. A float control on the vaporizer prevents flooding.

BREVITY—Identify by IEN - 12579 If you write the maker

CONSTRUCTION . . Concrete mixer rates 16 cu. ft., engine or motor drive

Source: T. L. SMITH CO.
2808 N. 32nd St., Milwaukee 45, Wis.



Ask for Bulletin 249

The steel drum in this new Model-409 Type 16-S machine measures about 58 in. in diameter by 44 in. in length. It has 22-in. openings and is mounted on 11-in. chilled-steel rollers equipped with SKF self-aligning ball bearings. Drive is by an air or watercooled engine or a 10-hp. electric motor. The machine is assembled on Timken-bearing 30-in. steel wheels with 7½-in. grooved steel rims in standard construction. Pneumatic tires can be supplied.

Aggregate and cement are handled by a clutch-operated skip loader that will elevate to discharge position in seven sec. and complete its cycle in about ten. Water is held in a 26-gal. vertical syphon-type tank with a balanced-piston valve and a gage graduated in pounds and gallons. A batch hopper or a feed chute can be specified to receive the mixed concrete. The machine measures 170 in. in overall length with a 90-in. skip in "down" position. It is about 96 in. in overall width and 108 in. in overall height with the skip up.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 12580 If you write the maker

AGASTAT TAKES TIME OUT TO RELAY SEASONS GREETINGS

AMERICAN GAS ACCUMULATOR COMPANY • 1027 Newark Ave., Elizabeth 3, N. J.

BREVITY—Identify by IEN - 12581 If you write the maker

There's a CASH-ACME Automatic Valve to handle anything that flows—Water, Air, Steam, Gases, Chemicals, Refrigerants, Oil, Gasoline and all other types of liquids.

Laundry Pressing Equipment Manufacturer Specifies CASH-ACME

If you have the problem of finding a lifetime valve that will turn in a consistent performance year after year on the products you manufacture, write CASH-ACME today. We can show you the lifetime installation to handle pressure control without failure and help with the successful operation of your equipment.

CASH ACME SILENT SENTINEL Automatic Valves

A. W. CASH VALVE MANUFACTURING CORP.
6612 E. Wabash Avenue
Decatur, Illinois

BREVITY—Identify by IEN - 12582 If you write the maker

BLANK AND EMBOSS WITH A VERSATILE STEELWELD PRESS

4800 panels of 26 ga. metal for 12" x 24" sound-deadening cells are blanked out and embossed per 8-hour day with this Steelweld Press. This versatile machine also does bending, punching, flanging, etc. in various thickness metals to one inch quickly and efficiently.

It is easy to change dies from one job to another or repeat runs of work to close tolerances.

STEELWELD BENDING PRESSES CATALOG No 2010

Send for free copy of catalog No. 2010.

THE CLEVELAND CRANE & ENGINEERING CO
4239 East 281st St. Wickliffe, Ohio

STEELWELD PRESSES

BREVITY—Identify by IEN - 12583 If you write the maker

with ALUNDUM Tumbling Abrasive and the Barrel-Finishing Process?

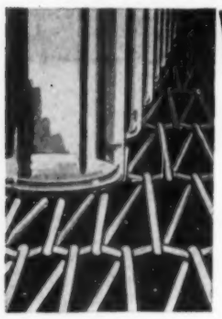
You can remove objectionable heat scale, burrs, tool marks and dirt from your metal parts quickly and economically with the barrel finishing process and with ALUNDUM Tumbling Abrasive—the ideal barrel finishing medium. You can finish large quantities of parts to exact dimensions and degrees of surface finish and prepare them for plating—ALL IN ONE OPERATION!

If you don't have barrel finishing equipment, Norton will be glad to make test runs for you.

NORTON COMPANY, WORCESTER 6, MASS.
Distributors in All Principal Cities

NORTON ABRASIVES

BREVITY—Identify by IEN - 12584 If you write the maker



WISSCO BELTS

assure trouble-free production schedules

Present-day demands for maximum production call for equipment that can be counted on to stand up and deliver dependable, uninterrupted service—particularly where punishing conditions are encountered.

Wisco Metal Processing Belts are specially engineered in various metals and alloys for long-lasting resistance to abrasion, corrosion and temperature extremes.

For additional information write or phone our nearest sales office.

THE COLORADO FUEL & IRON CORPORATION—Denver, Colorado
THE CALIFORNIA WIRE CLOTH CORPORATION—Oakland, California
WICKWIRE SPENCER STEEL DIVISION—Clinton, Massachusetts

WISSCO BELTS
PRODUCT OF WICKWIRE SPENCER STEEL DIVISION
THE COLORADO FUEL & IRON CORPORATION
CFI

BREVITY—Identify by IEN - 12585 If you write the maker

FREE-UP YOUR MACHINES

Dresser-made rings save you machining and material

Dresser's special method makes ring-shaped metal parts with important reductions in raw material and finishing. Sizes 4" to 72" diam.—up to 16 square-inch cross section.

Send for descriptive "RINGS FOLDER"

DRESSER RINGS

Dresser Manufacturing Division, 109 Fisher Ave., Bradford, Pa
(One of the Dresser Industries)

BREVITY—Identify by IEN - 12586 If you write the maker

PROMPT QUOTATIONS

on Rolled Forms, Stampings & Assemblies

You can have delivery and price figures as fast as you need them on your sub-contract work. We are equipped for volume production to meet your defense requirements.

Just send sketch, blueprint or work sample. No obligation.

Write or phone nearest Greene Co. representative

RACINE, WIS.
Greene Mfg. Co., Inc.
1028 Douglas Avenue
Phone: 4-7184

ST. LOUIS, MO.
R. G. Frankenberg
4053 Lindell Blvd.
LUcas 0618

CHICAGO, ILL.
H. R. Schulte
Room 306
605 W. Washington Blvd. AHdover 3-1785

MILWAUKEE, WIS.
D. E. Stephens
828 N. Broadway
MArquette 8-1569

WARSAW, N.Y.
Robert F. Foster
128 Wyoming St.
Phone: 343-J

NILES, OHIO
R. G. Alexander Co.
Niles 2-7525

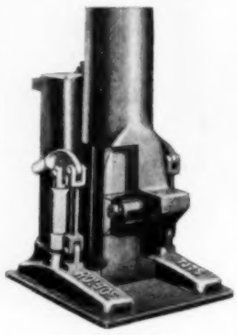
G-14a

Greene of Racine
GREENE Manufacturing Company, Inc., Racine, Wis.

BREVITY—Identify by IEN - 12587 If you write the maker

JACK . . Hand hydraulic design, 7 in. lift, 25 ton on cap or toe

Source: TEMPLETON KENLY & CO.
1012 S. Central Ave., Chicago 44, Ill.



For any position

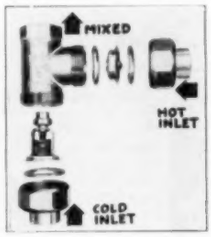
Rol-Toe trade names new design in the company's Simplex hydraulic jack line in which a roller bearing, back of the toe on the cap, rides a flat milled surface on the stationary ram to minimize friction. Rating for the load on the toe is the same as for the lifting cap on the top.

The assembly includes an independent oil reservoir, lever-operated pumps for high speed at low pressure and for low speed at high pressure. These pumps are assembled on the two sides of the ram and cap. The base measures 9 by 12 inches. The jac kstands 14 in. in height in closed position and weighs 110 pounds. Minimum toe height for the new design is 2½ inches.

BREVITY—Identify by IEN - 12588 If you write the maker

HEATING . . Thermostatic valve delivers water at desired temperature

Source: TACO HEATERS INC.
135 South St., Providence 3, R. I.



Type B is new design to replace the company's Type-S tempering valve in which hot and cold water are mixed under control of a thermostat to prevent delivery of excessively hot water by holding the outlet temperature within 135 to 145 deg. F. The valve is available in ½ and ¾-in. sizes for standard 125 lb. service.

In the new assembly the thermostatic element is made of bronze and copper in sealed design in an arrangement that permits quick replacement. A built-in check valve in the hot-water inlet equalizes pressures. Two union connections facilitate assembly.

BREVITY—Identify by IEN - 12589 If you write the maker

MANAGEMENT . . Pay policies for executives described in bulletin that reports current thinking

American Management Association
330 W. 42nd St., New York 18, N. Y.

Five papers are printed in Publication 97 of the Association's Financial Management series. They include incentive compensation for executives, the bonus as incentive, non-financial executive incentives, how much should an executive be paid, the rearmament program and the American economy. List price of the 32-page booklet is $1.25.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 12590 If you write the maker

KETT TOOLS *Pay off...*

THE KETT POWER SAW ...A FIST-FULL OF CUTTING POWER

In the tool kit of every contractor, builder, or maintenance man . . . in every metal-working shop, the Kett Power Saw is a time and labor-saving necessity. Light-weight but rugged and powerful, the Kett tool zips with amazing ease and speed through most any kind of sheet material . . . mild steel up to 10 gauge, aluminum to 3/16", plastics and other soft material up to ¼" thick.

Immediate Delivery. Write to Dept. A-12 for full details and descriptive literature.

The KETT TOOL COMPANY
5 EAST THIRD STREET CINCINNATI 2, OHIO

BREVITY—Identify by IEN - 12591 If you write the maker

MAXI-PICH SHEAVES

Four reasons why— YOU SHOULD DEMAND

"V-BELT" MAXI-PICH Stationary & Motion Control Sheaves

They're engineered for rugged performance from best grades of heat-treated steel and soft-gray iron castings.

You get every advantage of other sheaves **plus** these 4 outstanding features—

1. MAXIMUM PITCH DIAMETER VARIATION
2. CONSTANT BELT ALIGNMENT
3. INTERCHANGEABLE BUSHINGS
4. USES COMMERCIAL V-BELT AND COMPANION SHEAVE

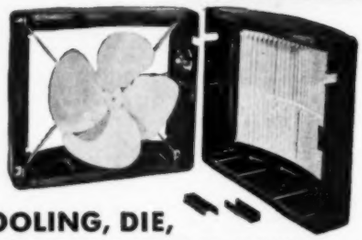
"V-Belt" Maxi-Pich Sheaves fit any factory machine—save installation and operating costs—speed production. For the FULL STORY, ask your "V-Belt" dealer, or write to the V-Belt Engineering Co., Richmond, Va.

V-BELT ENGINEERING COMPANY
RICHMOND, VIRGINIA

BREVITY—Identify by IEN - 12592 If you write the maker

PROFIT HAS MANY FORMS

when the material is DUREZ



TOOLING, DIE, ASSEMBLY COSTS SAVED

Both halves of this 20"x 23"x 14" cabinet-type ventilating fan housing are produced in one single-cavity mold. The economies noted were achieved in the design of the mold. Tongue and groove assembly sections, cored supporting ribs, grill mounting bosses, metal inserts for fan and motor assembly mounting, and slots for convenient carrying are all molded in. The Durez long-flow general-purpose phenolic makes a rigid, quiet housing that has unusual sales appeal.

"POPULAR PRICE" leads to VOLUME SALES

This small motorized humidifier taps a great new market in hatcheries, egg storage rooms, hospitals, textile mills, homes, etc., because it costs less to make. Three principal parts are molded of Durez compound specially developed to withstand heat and moisture without loss of electrical and mechanical properties. These can be produced and assembled at a fraction of the cost of the usual metals, need no machining and practically no finishing.

KNOWN AS THE MOST VERSATILE of all plastic materials, the Durez phenolics lend themselves to an extraordinarily wide range of design and production ideas. Durez has specialized from the beginning in the phenolics, now has available a wide variety of phenolic resins and more than three hundred molding compounds, including many designed to meet the requirements of MIL-P-14A. Let our field technicians help you. And to keep informed on industry's use of phenolics, write for our monthly "Durez Plastics News." Durez Plastics & Chemicals, Inc., 1712 Walck Road, North Tonawanda, N. Y.

DUREZ

Phenolic Plastics that fit the job

▼ BREVITY—Identify by IEN - 12594 If you write the maker ▼

"YANKEE" VISES

for accurate, work holding
START-TO-FINISH

Every operation is lined up square and true in a "Yankee" Vise. Carefully machined . . . top, bottom, sides and front end to give accurate alignment in any position. Easily made into jig. V-grooved hardened steel block furnished with each "Yankee" Vise. Four sizes . . . 1½", 2", 2¾" and 4" jaw widths. Write for "Yankee" Tool Book.

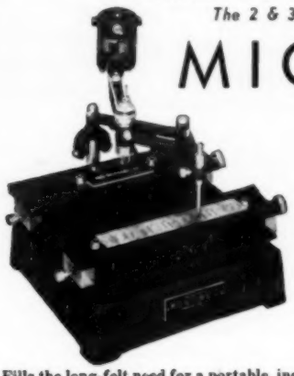
YANKEE TOOLS NOW PART OF
STANLEY
THE TOOL BOX OF THE WORLD

NORTH BROS. MFG. CO.
Philadelphia 33, Pa.

▼ BREVITY—Identify by IEN - 12595 If you write the maker ▼

A *BETTER* ENGRAVER
At *LOWER* COST
The 2 & 3-Dimensional

MICO



Fills the long-felt need for a portable, inexpensive and dependably accurate machine for making small dies, molds, templates, etc. Extremely simple to operate.

- Engraves 2 or 3 dimensions.
- Pantograph permits 4 reduction ratios.
- Micrometric depth control graduated in thousandths of an inch.
- Entire spindle assembly removable to facilitate cutter grinding.
- Rugged cast iron construction with exclusive adjustments for insuring quick, accurate setting.

Send for complete specifications and attractive price list

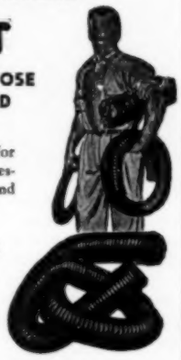
MICO INSTRUMENT COMPANY
81 TROWBRIDGE STREET, CAMBRIDGE, MASS.

▼ BREVITY—Identify by IEN - 12596 If you write the maker ▼

FOR VENTILATION
FUME & DUST CONTROL
AIR CONDITIONING

FLEXAUST

SPIRAL-REINFORCED HOSE
LIGHT, STRONG AND VERY FLEXIBLE



Flexaust is of proven suitability for a wide variety of suction and pressure uses in ventilation, fume and dust control, air conditioning.

EXTREMELY EASY TO INSTALL — EFFICIENT AND ECONOMICAL IN USE

SIZES: 1¼" to 28" dia.
Various Flexaust types, accessories, and other hose types also available:

BLOFLEX — Non-reinforced collapsible hose
PORTOVENT — Ring-reinforced retractable hose

Write for full descriptive data and prices

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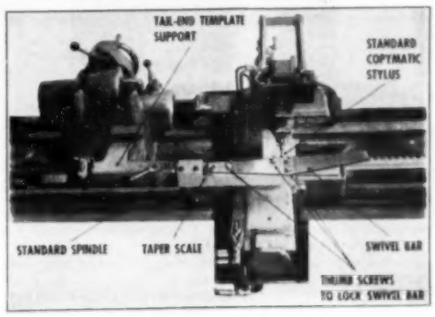
Dept. IE-12, 100 Park Ave., New York 17, N. Y.
Plant: Amesbury, Mass.

▼ BREVITY—Identify by IEN - 12597 If you write the maker ▼

LATHE TOOLS . . Taper attachment applies on company's Copymatic lathe

Source: LODGE & SHIPLEY CO.
3051 Colerain Ave., Cincinnati 25, Ohio



View from rear of lathe

New attachment employing a swivel bar and scale has been developed for use on the company's Copymatic lathes now in service as well as on new machines. The swivel bar is mounted on the standard tail end template support on the lathe and can be set quickly to a desired taper and locked in that position. Work having a continuous taper periphery or bore can be contour turned directly. The attachment applies to produce a round template when tapers form only a part of the overall surface. This round template is then placed between the standard Copymatic duplicating centers for tracer control duplication in any quantity.

▼ BREVITY—Identify by IEN - 12598 If you write the maker ▼

TRUCK . . Electric fork lift unit for loads to ½ ton in narrow aisles

Source: LEWIS-SHEPARD PRODUCTS INC.
193 Walnut St., Watertown 72, Mass.

Load length to 4 feet

Model E1SCTL is a new counterbalanced design in the company's JackStacker line of battery-powered trucks. The operator walks beside or in back of the truck to control the travel and lift movements. Special fork design, for operation in confined quarters, employs a hinged arrangement so the forks can be lifted when they are not carrying a load to make an overall length of 46½ inches. The load can be tilted to front or back and elevated by power to three heights of 82, 106 and 130 in. in three available models of the truck.

Construction includes a counterbalance for safe load handling on the short wheelbase, balanced hydraulic control valves and pump mounted in the hydraulic tank, ground and chromium-plated lifting ram, automatic take-up for the pressure packings. Sealed ball bearings and oil-impregnated bronze bushings eliminate need for service lubrication.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 12599 If you write the maker ▼

MERRILL
MATERIALS HANDLING
DEVICES

MERRILL BROTHERS
56-14 Arnold Avenue • Maspeth, N. Y.

▼ BREVITY—Identify by IEN - 12600 If you write the maker ▼

SAFELY EQUIPPED...for light metals

The ROTO-CLONE Type N Bench eliminates hazards of magnesium dust in finishing operations. Developed by AAF engineers for this purpose, the Type N has no moving parts yet maintains highest efficiency in collecting extreme fines.

The Type N ROTO-CLONE stores dust under water for complete safety. Available in sizes and arrangements to meet any requirements. If you are finishing magnesium, call your nearby AAF representative or write for Engineering Bulletin No. 277A.

AAF American Air Filter
COMPANY, INC.
335 Central Avenue, Louisville 8, Ky.
In Canada: Darling Bros., Ltd., Montreal, P. Q.

▼ BREVITY—Identify by IEN - 12601 If you write the maker ▼

FREE! 2 Catalogs to... HELP

Solve Your Ventilation Problems

in stores, offices, factories and institutional buildings. They include plans for effective fan installations, plus complete product information on dependable Emerson-Electric Exhaust Fans and Air Circulators.

WRITE for these authoritative catalogs today. Both are yours without obligation.

No. 266-A — Exhaust Fans
No. 266-B — Air Circulators

The Emerson Electric Mfg. Co., St. Louis 21, Mo.

EMERSON ELECTRIC
FANS • MOTORS APPLIANCES

▼ BREVITY—Identify by IEN - 12602 If you write the maker ▼

Cost-Chopper
FOR INDUSTRIAL CAFETERIAS

THE RIGHT CHOPPER
With ten models to choose from in the balanced U. S. line you can get the chopper that's exactly right for your needs.

MAKES TASTIER MEAT
Precision-built and correctly engineered, these choppers cut cleanly without mashing or heating meat. Meat fresh-cut this way in your own kitchen looks, keeps and tastes better.

Model 2512 CHOPPER
Modern Enterprise design. Smooth, easy-to-clean. Juicer-Puree attachment available at small extra cost to make tomato juice, apple sauce, sweet potato and strained vegetables and fruits of all kinds. Quality construction assures long life.

U.S. BERKEL *Write* for Illustrated Literature on Slicers • Choppers • Meat Saws • Tenderloin Machines

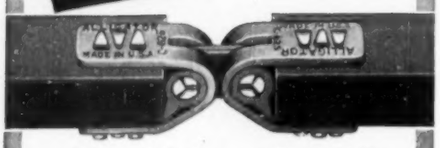
U. S. SLICING MACHINE COMPANY, INC.
1201 Berkel Building La Porte, Indiana

▼ BREVITY—Identify by IEN - 12603 If you write the maker ◁▷▼

Now you can fasten V-belts by using

ALLIGATOR

V-BELT FASTENERS



● Alligator V-Belt Fasteners and open-end (long length) V-belting in rolls will enable you to make up multiple V-belt drives for a wide variety of applications.

Available for B, C and D sizes of V-belting.

Not to be used for repairing endless cord V-belts.

Bulletin V-211 will give you complete details. A copy mailed on request.

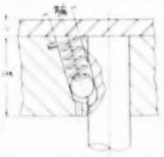
Order from your supply house

FLEXIBLE STEEL LACING COMPANY
4610 Lexington St., Chicago 44, Illinois

Also sole manufacturers of Alligator Steel Belt Lacing for flat conveyor and transmission belts and FLEXCO Belt Fasteners and Rip Plates for fastening and repairing conveyor belts.

▼ BREVITY—Identify by IEN - 12604 If you write the maker ◁▷▼

—Heavy Piercing Problems with New R-B Extra Heavy Duty Retainer



Here's a new combination of an extra heavy duty retainer and new punch design that brings economies of R-B interchangeability to hole-making formerly done by drills or without interchangeable punches.

For instance, in the application shown above, this heavy duty design enabled interchangeable punches to pierce ⅝" thick SAE 10-45 steel and eliminated costly drilling. The ball lock gives positive alignment and sure stripping without the use of other keying devices.

If you have thought your piercing jobs too tough for interchangeable punches, then it will pay you . . . in design, construction and operation savings . . . to investigate this new R-B extra heavy duty retainer. **Allied Products Corporation, Richard Brothers Division.**

Get the Whole Story

ALLIED PRODUCTS CORPORATION
RICHARD BROTHERS DIVISION
Dept. 59 • 12615 Burt Rd., Detroit 23, Mich.
Please send me your 52-page free catalog.

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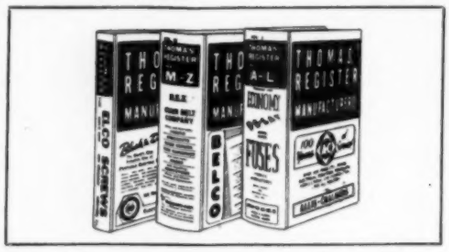
COMPANY _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____

Also Produced in Allied's Four Plants . . .
HARDENED AND PRECISION GROUND PARTS • STANDARD CAP SCREWS • SPECIAL COLD FORGED PARTS • SHEET METAL DIES • ALLITE DIES CAST OF ZINC ALLOY • JIGS • FIXTURES

For Your Special Information

ALL MAKERS ARE LISTED IEN S-41



Each day's mail brings us news of additional source changes as material restrictions affect regular lines of manufacture. It becomes increasingly important to have information on all possible sources for most everything you use in your plants and in your lines of manufacture.

There is where Thomas' Register stands ready to serve you through its listings of all makers of all products that are made in these United States. You have made a really constructive move if you have reserved a copy of the 1951 Edition to come from the presses shortly after the first of the year. In it, time and again through the year, you will be able to find additional makers when a source you have been using can no longer supply you.

If you have not reserved a copy we suggest you do so now. It is available at $15 plus handling charges. Your order now will assure delivery early in 1952.

PLANT MAINTENANCE SHOW IEN S-42

Note your calendar for January 14 to 17, the date for the Third National Plant Maintenance Show and Conference. It will be held in the Public Auditorium in Philadelphia.

Preventive maintenance for war production will be stressed in the subjects to be covered by nationally known speakers and by the exhibits in the exposition. Some 200 or more manufacturers will show new and established products for every maintenance and plant-operating purpose across all of the industry divisions.

Write for your advance registration blanks and for a hotel-reservation form to Clapp & Poliak Inc., 341 Madison Ave., New York 17, N. Y.

IRON AND STEEL SCRAP IEN S-43

We wonder if you really have an adequate picture of the problem of scrap for the steel mills? We wonder if you know that the mills must have an average of 3,000,000 ton each month to continue operation as we stand now, that this must be increased to 3,500,000 ton to meet projected requirements for 1952? Consider this very serious fact. Fine-comb your own plant and start your scrap moving to the mills.

Then write a letter telling what you have done and how you did it. Mail this letter to the Department of Commerce, National Production Authority, Washington 25, D. C. The NPA will use what you tell it to advise others so they can follow in your footsteps.

NEEDED FOR STEEL: 3,000,000 TON OF SCRAP PER MONTH

▼ BREVITY—Identify by IEN - 12606 If you write the maker ◁▷▼

TRIPLE PURPOSE MACHINE
FILES...SAWS...STONES

ILLINOIS DIE FILING MACHINE

An accurate, smoothly-operating machine that files, saws and stones the most intricate die shapes . . . eliminates tedious hand operations . . . reduces costs. It is quality-built for long, trouble-free service . . . hardened and ground shafts running in bronze bushings minimize wear. The holding chuck and clamping device provide perfect file alignment.

Sawing

Write for descriptive literature

Stoning

ILLINOIS TOOL WORKS
2501 N. Keeler Ave. • Chicago 39, Ill.
MANUFACTURERS OF METAL CUTTING TOOLS AND SHAKEPROOF PRODUCTS

▼ BREVITY—Identify by IEN - 12607 If you write the maker ◁▷▼

PURE WATER DISTILLED WATER?

PROBLEMS SOLVED WITH Barnstead EQUIPMENT

DEMINERALIZED WATER?

In hundreds of manufacturing processes, where complete purity is needed, Barnstead Stills provide the highest-quality, lowest-cost, chemically pure, sterile water from ½ to 1000 gallons per hour. With over 100 different models to choose from, Barnstead can provide the exact still to fit your particular needs. For Barnstead Laboratory and Industrial stills are the proven standard of the scientific and industrial world.

Where modern manufacturing processes require only high-test mineral-free water, Barnstead Demineralizers are the best producers . . . 5c per 1000 gallons with a minimum of supervision and maintenance. Many new industries are turning to Barnstead Demineralized Water for greater production, fewer rejects and better quality control.

WRITE

Catalog #123 gives both sides of the Pure Water Picture. Since Barnstead makes both stills and demineralizers, you'll find this catalog complete, authoritative, unbiased. Write Today!

Barnstead STILL & STERILIZER CO.

First in Pure Water since 1878

50 Lanesville Terrace, Forest Hills, Boston 31, Mass.

▼ BREVITY—Identify by IEN - 12608 If you write the maker ◁▷▼

NEW MAGNA BIT HOLDER

A REVOLUTIONARY, LABOR SAVING TOOL. CUTS SCREW DRIVING COSTS 3 NEW WAYS

Hand starting or *pre-positioning screws* in assembly operations is *no longer necessary*; a high energy *permanent* magnet in bit chuck holds the bit and energizes it with 10 times the "pull" to hold the screw *firmly* on bit. Labor costs are cut.

Reduces bit costs through the use of super hard, low-cost interchangeable insert bits.

Reduces bit wear and replacement since the energized bit seats itself positively in the screw slot or recess.

Bit holders available for all makes of power and spiral drivers. Also super hardened tool steel insert bits for all types and sizes of screws.

Permanently Magnetic Magna-Tip Hand Screw Drivers . . . bits for all types and sizes of screws
and Magna-Tip Hex Drivers for hex head screws

U. S. Patent No. 2,550,775

Write for folder 56-C, information and prices

MAGNA TOOL CORPORATION
779 Washington St. Buffalo 3, N. Y.

▼ BREVITY—Identify by IEN - 12609 If you write the maker ◁▷▼

this new WELDING DESIGN MANUAL

FREE! FOR THE ASKING

To assist you in your re-tooling problems . . . or to help you analyze your present welding methods so that you may enjoy maximum speed, efficiency, and economy in many of YOUR production problems...

Over 40 pages of helpful data covering basic and advanced welding techniques and designs used in fabricating and assembly. Profusely illustrated with scores of application drawings; weld diagrams; tables containing latest information on melting temperatures, tensile strengths, corrosion factors; charts; alloy recommendations; etc. Convenient digest size.

This just-off-the-press book is "must" reading for anyone engaged in defense production and design, and will certainly be time profitably spent for any production man.

SEE . . . The unbelievable savings in metal-joining which can now be yours through the use of "Low Temperature Welding Alloys" discovered a few years ago and now used in over 78,000 industrial plants throughout America for more efficient metal-working production as well as for salvaging irreplaceable tool and machine parts.

Over 100 different, new, EUTECTIC Low Temperature WELDING ALLOYS® and EUTECTOR® Fluxes are job-engineered for use on ALL metals—cast iron, alloy steels, aluminum, copper and nickel alloys, die castings, overlays, etc., and may be applied with ALL heating methods—torch, arc, furnace, induction heating, etc.

SEND FOR YOUR COPY TODAY!

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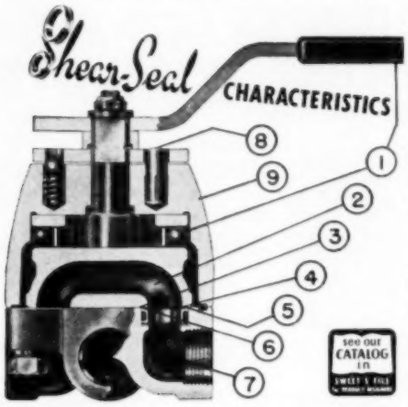
172nd Street at Northern Boulevard • Flushing, New York, N. Y.

BREVITY—Identify by IEN - 12610 if you write the maker



	CHARACTERISTICS	OPERATING ADVANTAGES
1	Pressure Balanced Sealing Members and Generous Ball Bearings	Non-fatiguing Handle Load at 6000 psi
2	Large, Unobstructed, Tubular Flow Passages	No Pressure Waste
3	Self-Lapping Metal to Metal Seal	Wears-In Where Others Wear-Out

BARKSDALE VALVES
1566 E. SLAUSON AVE. • LOS ANGELES 11, CALIFORNIA

BREVITY—Identify by IEN - 12611 if you write the maker

Extra fast, easy pipe cutting with RIDGID

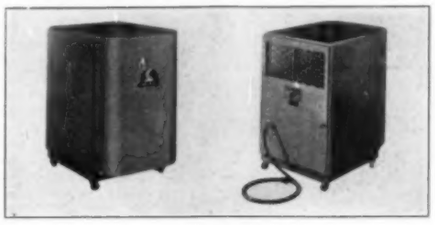
● It rolls right through any pipe with least effort, quick almost burrless cuts—factory tested, tracks perfectly. Special thin-blade cutter wheel for extra fast cutting—or heavy-duty wheel for extra long service. Guaranteed warp-proof special malleable housing. Five models to 6" pipe; 4-wheel short-handle models for speedy cutting in tight places. For tops in clean, easy pipe cutting, buy RIDGID Cutters at your Supply House.

RIDGID
Work-Saver Pipe Tools
THE RIDGE TOOL CO. • ELYRIA, OHIO

BREVITY—Identify by IEN - 12613 if you write the maker

DRYING . . Refrigerating unit to remove excess moisture from a room

Source: WALTER HAERTEL CO.
2838-42 Fourth Ave., Minneapolis 8, Minn.



Trade named Airmaster

Model 50-B is improved design of the company's Model-50 refrigeration-type dehumidifier, previously described IEN-2815-51. The new assembly is enclosed in a caster-mounted rectangular housing with an extension cord for connection to a 110-volt 60-cycle single-phase ac. power source. The compressor is semi-sealed design to operate with Freon-12 refrigerant. It is driven by a ½-hp. motor which also drives a 6-in. centrifugal blower.

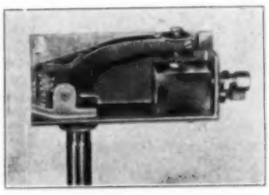
Air movement through the unit ranges from 290 to 320 cfm. depending upon the setting of a ratio damper which permits a part of the work, done in cooling the entering air down to the dew-point, to be recovered with corresponding reduction in refrigeration load.

The dimensions are 21 by 27 by 33 inches. Condensate removed from the air is delivered into a container for periodic disposal or can be directed to an outside connection. Maximum 24-hr. capacity is 54 lb. of water removed from the air.

BREVITY—Identify by IEN - 12614 if you write the maker

CONTROL . . Heat sensitive valve regulates flow of air at 15 pounds

Source: BURLING INSTRUMENT CO.
3-7 Vose Ave., South Orange, N. J.

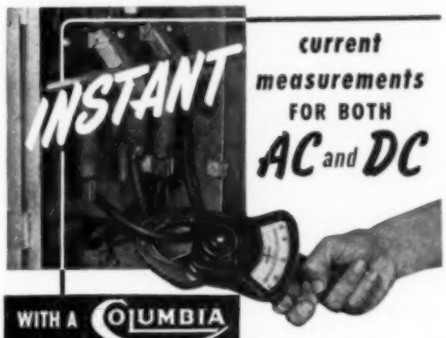


Model HA heat-sensitive valve is a new companion unit to the company's heat-sensitive switch, previously described IEN 5285-44. The new valve applies in a control line to deliver or cut off pressure in a 15-lb. air line leading to a diaphragm valve, or other air-operated control mechanism, just as the heat-sensitive switch operates snap-acting contacts to open or close an electric control circuit. The valve has been designed for applications where there is a fire hazard if electricity is used but where the control air pressure can be applied safely.

Operation is by a heat-sensitive tube which expands or contracts on temperature change. The standard assembly can be provided for any desired maximum temperature to 1,400 deg. F. Special tubes are available for temperatures to 2,000 deg. F. Expansion of 0.005 in. is sufficient to open or close the pilot valve. Overall dimensions on the housing are 5⅛ by 1¾ by 3 inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 12615 if you write the maker



current measurements FOR BOTH AC and DC

WITH A COLUMBIA

TONG TEST AMMETER

There is no other instrument like a Tong Test—it measures both A.C. and D.C. Readings are made instantly and accurately.

These outstanding features are yours when you use a Tong Test Ammeter:

- No breaking of circuit
- Operated with one hand
- Safe and convenient to operate
- Light weight—low price
- Scale ranges up to 1000 Amperes
- Voltage attachment available
- Five types to accommodate cables up to 3⅞", bus bars up to 4½" x ½"

Write for Tong Test Bulletin IQ-400

COLUMBIA ELECTRIC MFG. CO.
4519 Hamilton Ave. Cleveland 14 Ohio

BREVITY—Identify by IEN - 12616 if you write the maker

BREVITY—Identify by IEN - 12617 if you write the maker

"CAP THIS"

...for lowered maintenance!

S.Silbhite ELASTOPLASTIC ALEMITE FITTING CAPS...

Keep the tips of alemite fittings clean. Prevent dirt or grit from being forced into bearings when grease gun is applied. Cut maintenance costs because—*the bearing that lives a clean life, lives a long life!*

Available for Zerk or Hydraulic, Button Head and ⅛" Dot Types. Black vinylite plastic, long-lasting, easy to apply, are not affected by oil, grease or gasoline.

ASK FOR FREE BULLETIN P-5103

THE S.Silbhite PLASTICS DIVISION
DENTAL MFG. CO.
Dept. NP 10 East 40th St. NEW YORK 16, N. Y.
Western District Office: Times Building, Long Beach, Calif.

BREVITY—Identify by IEN - 12618 if you write the maker

140-A Series. Equipped with Roller Bearing Semi-Steel Wheels.

for *heavy loads hard service* it's Best to Use

Bond built-for-the-job

40-A SERIES STRUCTURAL STEEL CASTERS

1340-A Series. Equipped with Roller Bearing Solid Rubber Wheels.

Depend on Bond 40-A Series Casters when your service needs require the strength and durability of all-steel construction coupled with easy maneuverability.

The 40-A Series have double ball races. The upper race absorbs all side shock; the lower race absorbs the vertical load. These casters are pressure lubricated for frictionless operation—stand up best, keep costs way down.

Write today for Bond Catalog K-38. It gives complete information on all Bond Casters.

BOND FOUNDRY & MACHINE CO.
Manheim, Pennsylvania

BREVITY—Identify by IEN - 12619 If you write the maker

Brings power paint handling *Anywhere in the plant!*

- It's fast. No shutdown for refill!
- Pumps direct from original containers!
- Cuts cleaning time in half!
- Non-tip dolly goes anywhere—up or down stairs—inside or outside the plant.

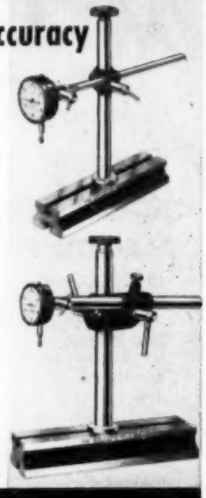
FREE—write now for literature giving full data. Alemite, Dept. B-121, 1830 Diversey Pkwy., Chicago 14, Illinois.

ALEMITE Versatal

BREVITY—Identify by IEN - 12620 If you write the maker

DIAL TEST INDICATORS

for on-the-job accuracy assurance



With minimum disturbance of work or loss of time, Brown & Sharpe Dial Test Indicators provide quick, easy accuracy checks for flatness, concentricity, run-out, or innumerable other relationships. Especially valuable to set-up men, machine operators, inspectors, or toolmakers.

The carefully machined parts of these quality tools assure smooth, solid movement, and precise clamping. Dial face may be turned to bring zero under hand in any position. Wide variety of styles. Write for catalog. Brown & Sharpe Mfg. Co., Providence 1, R. I., U. S. A.

WE URGE BUYING THROUGH THE DISTRIBUTOR

BROWN & SHARPE

BREVITY—Identify by IEN - 12621 If you write the maker

YES...YOU CAN HEAR IN NOISY SPOTS

USE Burgess-Manning ACOUSTI-BOOTHS

You can hear easily . . . talk comfortably . . . in a Burgess-Manning Acousti-Booth. Thick walls of sound-absorbent material soak up noise. Conversations are clearer . . . "private." Airy, no door . . . easily moved . . . sturdy construction.

Mail Coupon for FREE BULLETIN

BURGESS-MANNING COMPANY
Architectural Products Division
5970-A Northwest Highway, Chicago 31, Illinois
Please send booklet describing Burgess-Manning Acousti-Booths.
Name
Firm Name
Street-City

BREVITY—Identify by IEN - 12622 If you write the maker

MACHINING . . Automatic machine drills, reams, threads cylinder blocks

Source: GREENLEE BROS. & CO.
1703 Herbert Ave., Rockford, Ill.

One of three machines

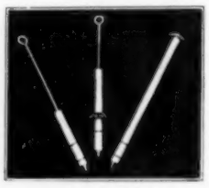
New machine assembles 16 stations to perform operations that include drilling, reaming and threading on cylinder blocks that ride through on a conveyor from one end to the other. The machine finished 81 blocks per hour at 80 per cent efficiency, performing 123 operations in 36 seconds. It is one of three machines now operating in a cylinder-production line.

Cylinder blocks are loaded with the pan rail down and the front end leading. They are machined in this position through nine stations. A turn-over fixture rotates the work through 180 deg. until the pan rail is on the top and the work enters the tenth station. Following heads then tap 38 holes on the left-hand side and the top of each block. Following these operations the work is again turned through 90 deg. horizontally to present the ends to the remaining stations. They complete 22 additional tapping operations on holes drilled by one of the preceding units into the cylinder block.

BREVITY—Identify by IEN - 12623 If you write the maker

MAGNET . . Alnico permanent design picks up chips in restricted location

Source: MULTIFINISH MFG. CO.
2114 Monroe Ave., Dept. 392, Detroit 7, Mich.



$4.25 to $23.60

Magnetool trade names a new cylindrical stripper-equipped magnet available in various sizes and designs as indicated in the illustration. Diameters range from $\frac{1}{16}$ to $2\frac{5}{8}$ inches.

Each assembly is equipped with a brass pick-up tip to prevent sticking. A hand wipe-off release or the company's patented mechanical "pull-to-release" can be specified. Neoprene bumper rings prevent the magnet from attaching itself to the sides of a recess in which it is inserted.

BREVITY—Identify by IEN - 12624 If you write the maker

NICKEL ALLOYS . . Information on fabrication and design of nickel-alloy pipe and tube lines

International Nickel Co.
67 Wall St., Room 703, New York 5, N. Y.

Technical Bulletin T-17 now is offered on request in recently revised 28-page edition to bring you up to date on seamless nickel and nickel-alloy tubes for chemical and process use. It includes properties, selection data and calculations, welding, brazing, bending, threading, fittings, available forms, tolerances, applicable specifications.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 12625 If you write the maker

POCKET-SIZED POWERHOUSE

Manufacturers are amazed at the work this unique right-angle bevel gear drive does, the space it saves, the problems it solves. ANGLgear has unlimited applications in the industrial field.

CHECK THESE FEATURES . . .

√	Hardened gears
√	Antifriction bearings
√	Flanged end mountings
√	Three half side mounting
√	Universal pilot on mounting ends
√	Lubricated for life

SOLD THROUGH LEADING DISTRIBUTORS THE COUNTRY OVER

AIRBORNE ACCESSORIES CORPORATION
1414 Chestnut Avenue, Hillside 5, New Jersey
A.A.C.

BREVITY—Identify by IEN - 12626 If you write the maker

COMPARISON PROVES the VALUE of VEELOS—the Adjustable V-Belt

VEELOS V-BELTS	ENDLESS V-BELTS
What about ADJUSTABILITY?	
Any length is instantly available from a single reel for *any* v-belt drive.	Standard or special lengths must be supplied for *individual* drives.
What about INVENTORY?	
4 reels can care for every v-belt need in the O, A, B & C widths. No deterioration or obsolescence of spare belts.	316 sizes are required to provide a *complete* stock in the O, A, B & C widths. Spare belts not immediately used will age and deteriorate.
What about MAINTENANCE?	
Belts can be adjusted or replaced without moving the motor.	Sliding or pivoted motor bases are necessary to replace endless v-belts.
What about OPERATING EFFICIENCY?	
Full power delivery can be maintained because the tension of each belt in a matched set is kept uniform by removing or adding links.	Individual belts cannot be adjusted to maintain uniform tension and provide full power delivery.

VEELOS THE LINE V-BELT

Get all the facts . . . write for your copy of the Veelos Data Book.

MANHEIM MANUFACTURING & BELTING CO.
651 Manbel St., Manheim, Pa.

Adjustable to any length • Adaptable to any drive

BREVITY—Identify by IEN - 12627 If you write the maker

Moving or Storing is Rapid, Convenient and Inexpensive with

IRONBOUND SEMI-LIVE SKID PLATFORMS

Ruggedly built with capacities up to 2500 lbs. These units are quickly made mobile with the use of low cost lift jacks . . . One of the methods that Ironbound engineers use to increase production and conserve space at low cost.

SEMI-LIVE SKID WITH BOX TOP

. . . permanently attached or removable. Also available with many other superstructures to "Short-Haul" your products thru production or into storage. Useful in hundreds of spots in every plant.

THE IRONBOUND "SAFETY-SKID" WITH ROUND CORNERS

Ironbound construction assures long hard use with complete safety to product and operator. Still the time proven method for handling of materials efficiently and economically.

Ironbound

IRONBOUND BOX & LUMBER COMPANY
Materials Handling Division
58 HOFFMAN PLACE • HILLSIDE, N. J.

MANUFACTURERS OF QUALITY BUILT SKIDS, SEMI-LIVE SKIDS, FLOOR TRUCKS, ROLL TRUCKS, DOLLIES AND PRY BARS

BREVITY—Identify by IEN - 12628 If you write the maker

Greatest Advancement in Snow Plow History!

TRIO SNOW JET

Here's big news in Snow Plows! The SNOW JET—a 30" Double Rotary Snow Plow with 7½ H.P. gasoline engine and rugged, never-stop endless track.

Walks through *any* snow at desired throttle speed. A real *Little Giant of the North!* Designed for easy maneuverability; built for the worst that winter can offer. Shifts forward, reverse and neutral. When in neutral there is live blower power for blowing out deepest drifts. Six foot spout swivels any direction.

LITERALLY EATS IT UP . . . AND BLOWS IT AWAY!

TRIO ROTARY SNOW PLOW

Farmers, municipalities, townships, counties and many others need this Six Foot Double Rotary Snow Plow. Designed to move more snow faster, easier, at less cost. Easy to mount on most any truck or farm tractor. Acclaimed by users throughout Minnesota and Dakotas, where winters are most severe.

Write, Wire or Phone for complete literature!

DAHLMAN EQUIPMENT SALES CO.
500-502 N. PRIOR ST. PAUL 4, MINNESOTA

BREVITY—Identify by IEN - 12629 If you write the maker

Dependable-Efficient Small Transformers

The sizes and styles you want

Standard and special types of small Uptegraff Transformers are available, for indoor or cabinet service. Sizes from 0.1 to 10 KVA. Totally enclosed dry types, and styles for built-in applications.

The design and manufacture of small transformers comes under a separate division within the Uptegraff organization. Skillful engineering, workmanship of the highest order and careful inspection and testing insure top quality when you specify UPTEGRAFF.

R. E. UPTEGRAFF MANUFACTURING CO.
THOMAS STREET . . . . SCOTTDALE, PENNSYLVANIA
Makers of Power · Distribution · Instrument · Specialty Transformers

BREVITY—Identify by IEN - 12630 If you write the maker

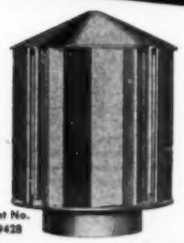
do you know the TRUTH about ventilators?

Ventilators are usually selected on the basis of their *capacity ratings*. That makes sense, but do you know that:

1. Capacity ratings of most ventilators are *not* certified.

2. Capacity ratings of most ventilators are based on *horizontal* wind tests only.

Breidert Air-X-Hausters
provide safe, sure ventilation no matter which way the wind blows!

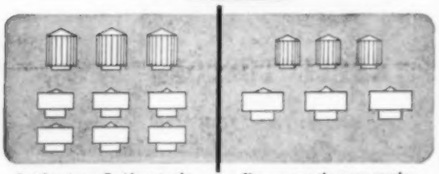


Patent No. 2269428

and . . . Breidert Air-X-Hausters are the *only* ventilators with published certified capacity ratings based on tests* made with wind blowing in *all* directions as shown above.

Only such tests can guarantee the capacities a ventilator will deliver under actual operating conditions. No matter which way the wind blows, barring interior negative pressures, the Breidert provides safe, sure ventilation . . . on roofs, vent flues, chimney tops. Stationary, no moving parts, nothing to jam or get out of order.

HOW YOU CAN GET BETTER RESULTS WITH LESS MONEY



It takes fewer Breiderts to do the job as same size conventional ventilators. **(or)** *You can use the same number of smaller size Breiderts to do the same job as conventional ventilators.*

Get *all* the facts! Write today for complete Engineering Data Book, including certified capacity ratings. Address Dep't C.

**By Pittsburgh Testing Laboratories*

THE G. C. BREIDERT CO.

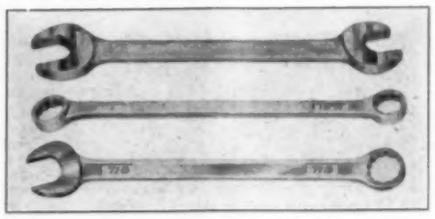
3129 San Fernando Road, Los Angeles 65, Calif.

Representatives in principal cities throughout the U.S.

BREVITY—Identify by IEN - 12632 If you write the maker

WRENCHES . . Open-end, box and combination, 3/16 to 1⅝ in. sizes

Source: PROTO TOOLS
2207-11 Santa Fe Ave., Los Angeles 54, Calif.



Three types recently redesigned

Polished heads, satin-finished shanks, die-formed size markings, and in the open-end design, tapered jaws at a 15-deg. angle in pear-shaped heads characterize recently improved construction in the company's line of wrenches. There are 26 open-end units, the smallest with openings 3/16 and ¼ in. and the largest 1½ and 1⅝ inch. Overall length is 4⅛ to 19½ inches.

The box wrench is made in 25 sizes from 3/16 by ⅜ to 1⅝ by 1 11/16 inches with overall length at 4¼ to 24½ inches. The heads are off-set 15 deg. with the shank to clear projecting objects over which the wrench must turn. In the combination design there are 21 standard sizes between ¼ and 1⅝ in. measuring 3 to 23 in. in length. In addition there are nine long-type sizes between ¼ and ⅝ in. measuring 4⅞ to 11¾ in. in length.

BREVITY—Identify by IEN - 12633 If you write the maker

WELDING . . Double head machine welds two studs on side of steel tube

Source: KSM PRODUCTS INC.
6510-14 Park Ave., Merchantville 8, N. J.

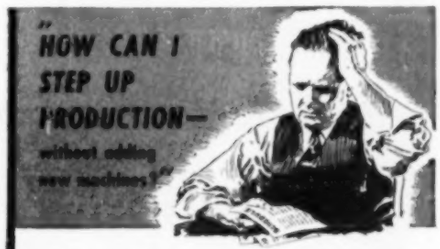
To your specifications

Model E-1001 is a new special assembly of equipment for application in a production line to weld the company's arc studs to the sides of a steel tube. The machine is representative of special equipment the company is prepared to design and manufacture for specified stud assembly. It is electrically controlled, the operator being required to press two safe-start buttons at the front of the housing. The machine then moves through an automatic cycle to secure and position the work and to complete the weld. One operator can weld eight studs, two each on four tubes per minute.

Overall dimensions are 36 by 30 by 66 inches. Weight is 800 pounds. The equipment includes a welding motor-generator set rating 40 volts and 400 amps. and a control circuit rating 110-volt 60-cycle ac. Air pressure is required at 80 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 12634 If you write the maker



How to do *that* is "the answer to the maiden's prayer" for the harassed Production Man today. Well, there's one thing very sure about it. If your machines occasionally stand idle at odd moments (even if this down-time amounts to only a few minutes each day), they aren't giving you all-out production. Now, *you* can't watch each machine all day, but a *Servis Recorder* can—and *does*. And its chart reports every idle period. Then you'll know what to do to step up production. Write for our folder—"*A Busy Plant.*" THE SERVICE RECORDER CO., 1375 Euclid Avenue, Cleveland 15, Ohio.

The Servis Recorder
The Time Clock for Machinery

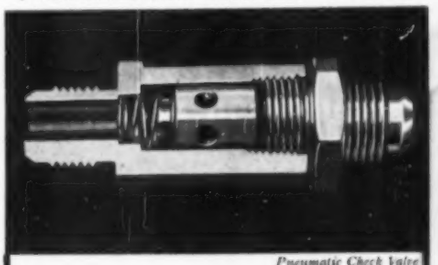
BREVITY—Identify by IEN - 12635 If you write the maker

giant keyseaters

M & M Giant Keyseaters, built in a range of sizes, speedily and accurately cut internal keyways or splines in the bores of pulleys, gears, fly wheels or any other machine part. Special fixtures and cutters are available for unusual shaped keyways and taper work. Send us your problems.

mitts & merrill
1014 South Water · SAGINAW, MICHIGAN

BREVITY—Identify by IEN - 12636 If you write the maker



Pneumatic Check Valve

KOHLER PRECISION PARTS

Aircraft · Industrial · Automotive

Kohler, a leading supplier of precision parts, will develop valves and fittings for volume production to meet special applications. Send for catalog.

Kohler Co., Kohler, Wisconsin. Established 1873

KOHLER OF KOHLER
PLUMBING FIXTURES · HEATING EQUIPMENT · ELECTRIC PLANTS
AIR-COOLED ENGINES · PRECISION PARTS

BREVITY—Identify by IEN - 12637 If you write the maker

benchmaster ECONOMY PROVED AGAIN!

5 Benchmasters COST LESS THAN 1!

One operator used his Benchmaster press for all 5 stages of a forming operation. Die changes and set-ups proved costly—both in time and lost production. NOW—5 Benchmasters do the same job, each handling a separate stage. Tooling is never changed or removed. Savings in time and extra output have paid off the entire cost and continue to pay a high dividend on a low investment!

There's a low-cost Benchmaster for every requirement—1 Ton, 4 Ton, 7½ Ton and Deep Throat models. Write for literature or see your dealer.

benchmaster
PUNCH PRESSES AND MILLERS
2952 W. Pico Blvd., Los Angeles 6, California

World's largest manufacturer of small punch presses and milling machines.

BREVITY—Identify by IEN - 12638 if you write the maker

Jam-packed with cost-cutting, efficiency-boosting characteristics, the Johnson Joint offers exciting possibilities you should know about. It's a packless, self-lubricating and self-adjusting way to get heating or cooling agents in or out of rotating machine parts; used on calenders, dryers, ironers, mills and similar machines. There are hundreds of design and production problems for which it holds the perfect answer.

Write for complete literature

The Johnson Corporation

846 Wood St., Three Rivers, Mich.

BREVITY—Identify by IEN - 12639 if you write the maker

Dutton EconoTHERM SAVES $20 PER DAY!

That's on fuel alone, reports McInerney Spring & Wire Co., of Grand Rapids, Michigan

How can *you* save on steam generation costs? Consider this case: During warm weather, McInerney was firing one of two 300 H.P. boilers for process steam only. This much capacity was not needed.

A 100 H.P. oil-fired Dutton EconoTHERM was installed for spring-to-fall use only. *Savings were over $20 per day on fuel alone!*

This, plus big labor savings, leaves the owner "highly pleased." We believe you'll be equally pleased with the "packaged" EconoTHERM's automatic operation and *exclusive* off-center firing. (Gas or oil.) Find out why this gives you faster steaming — greater safety — lower cost!

WRITE NOW FOR ECONOTHERM BULLETIN EC-100 J

Other types and sizes — 5 to 250 h.p.

See Yellow Pages in Phone Book for Dutton Representative

Dutton BOILER DIVISION
HAPMAN-DUTTON COMPANY • KALAMAZOO, MICH.
Boiler Makers Since 1880

BREVITY—Identify by IEN - 12640 if you write the maker

FREE! 44-Page Book

gives you complete data on wire rope and chain fittings

Save time! Save trouble! Laughlin's authoritative, illustrated Catalog-Data Book answers all types of problems involving wire rope and chain fittings. Read all about the wide array of *standard* Laughlin items. Dispense with needless, costly "specials!" Yours for the asking!

LAUGHLIN
THE MOST COMPLETE LINE OF DRAW-FORGED WIRE ROPE AND CHAIN FITTINGS

GET YOUR COPY NOW ...at no cost or obligation

THE THOMAS LAUGHLIN CO.
112 Fore St., Portland 6, Maine

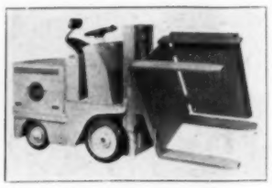
Please send Catalog-Data Book #150 to:

Name ..... Position .....
Company .....
Street .....
City ..... Zone ... State .....

BREVITY—Identify by IEN - 12641 if you write the maker

TRUCK . . Load inverting attachment to turn food products over in storage

Source: BAKER-RAULANG CO.
1248-52 W. 80th St., Cleveland 2, Ohio



So canned milk can't settle

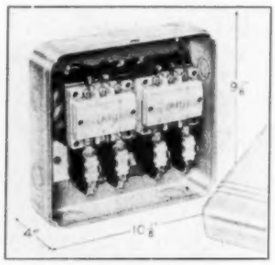
Certain products such as canned milk, that requires periodic turning over in storage, can be handled by this new fork truck attachment. It consists of a revolving head and a set of top and bottom forks with a plywood backstop and a side retaining board. The operator moves his truck in with the attachment position so the retainer is in vertical position. An empty pallet is carried on the top forks and the lower forks are run into position to lift a loaded pallet from a storage pile.

The operator then turns the load through 180 deg., the retainer holding it in place while the turn is being completed. The inverted load is then on the previously empty pallet and can be put back into storage. Application can be made on any of the company's 1½ or 2-ton fork trucks.

BREVITY—Identify by IEN - 12642 if you write the maker

MOTOR CONTROL . . Magnetic starter, reversing and multi-speed assemblies

Source: ARROW-HART & HEGEMAN ELECTRIC CO.
101-5 Hawthorn St., Hartford 6, Conn.



Straight through wiring

Sizes range from No. 0 to No. 4 in this new magnetic starter. It is available in Type RAR for reversing duty and Type RAS for multi-speed motors. The assembly can be specified in NEMA Type I, IV, VII and IX housings to meet a range of operation conditions. The Size 1 in NEMA Type I with two-speed separate windings has starter unit dimensions of 7½ by 3⅜ by 5¾. The housing measures 10⅛ by 4 by 9⅛ in. in overall dimensions.

BREVITY—Identify by IEN - 12643 if you write the maker

VALVES . . Causes of water hammer described in booklet along with a solution

Williams Gage Co.
1618-26 Pennsylvania Ave., Pittsburgh 33, Pa.

"Water Hammer" is title and subject of new 8-page bulletin written in the form of a technical article by J. A. Hager. It describes cause, effect, and methods of control in pipe lines. Pressure diagrams show what takes place inside a pipe when water hammer occurs. Notes are given on the company's check valve.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 12644 if you write the maker

with MULTI-CLEAN CONCRETE FLOOR FINISHES *and* THE MULTI-CLEAN METHOD

Concrete floor maintenance ceases to be a time killer and financial burden with the efficient, economical Multi-Clean Method. Multi-Clean Neo-Dry Concrete Sealer or Multi-Clean Concrete Preserver fortifies concrete against abrasion, oils, acids. Eliminates flaking and dusting. Conditions surface for heavy traffic by imparting a tough, sanitary finish . . . is an excellent base for Multi-Clean Anti-Slip Waterproof Wax.

Eliminate long hours of scrubbing and sweeping with the Multi-Clean Scrubber and Multi-Clean Wet-Dry Vacuum, a floor maintenance team unexcelled for reducing floor care time and costs on every type of floor. Write us about your floors and we will show you how to profit by using the Multi-Clean Method.

Multi-Clean All-Purpose Scrubber

Multi-Clean Wet-Dry Vacuum

Write Multi-Clean Products, Inc., Dept. IE-12 for more information.

MULTI-CLEAN
2277 Ford Parkway
ST. PAUL 1, MINNESOTA

free! FLOOR MANUALS—Handy file size, each manual deals with a specific type of floor, its characteristics and care . . . concrete, terrazzo, wood, asphalt and rubber tile, linoleum.

BREVITY—Identify by IEN - 12645 if you write the maker

WHEN YOU USE Titeflex FILTERS

Here's how you Save Time: The Titeflex backwash system cleans out all residue automatically in approximately 20 minutes *without manual labor.*

Here's how you Save Materials: Permanent filtering elements support cake. There is no need for costly replacements such as bags, pads, sheets, etc.

These Titeflex features, plus many others, add up to genuinely efficient *lower-cost* filtration . . . an easier method of handling a difficult mechanical problem. Get the complete Titeflex story!

WRITE FOR FREE CATALOG
Showing sizes, capacities and filtration areas of all Titeflex models.

TITEFLEX, INC.
Sub FRELINGHUYSEN AVENUE NEWARK 5, N. J.

BREVITY—Identify by IEN - 12646 if you write the maker

CUTTING PADS

Made of tough, "self-healing" TYGON plastic, COLONIAL Cutting Pads —

1. Reduce die wear and breakage,
2. Lessen rejects from double cutting due to "bounce back",
3. Increase production through quiet, less fatiguing operation.

Long wearing, dustless, and usable on both sides, COLONIAL Cutting Pads are widely used in machine, or hand cutting of rubber, leather, plastics, cork, candy, paper, fibre, felt cloth, foils, or light gauge metals.

Available in 5 standard sizes: 20"x20"x⅛", 18"x36"x¼", 18"x36"x1", 20"x40"x¼", 20"x40"x1". Generous credit given for return, after full use.

Write, today, for full information and prices!

COLONIAL RUBBER CO.
RAVENNA, OHIO

BREVITY—Identify by IEN - 12647 if you write the maker

REFLECTOSCOPE MEANS "ON THE JOB" *Ultrasonic* INSPECTION OF METALS AT LOW COST

Reflectoscope non-destructive testing locates internal defects accurately and instantaneously. Penetrates up to 25 feet. Tests raw stock, semi-finished and finished products and detects fatigue fractures. It's portable too! Weight is only 95 pounds; compact size is 14¼" x 18¼" x 23½".

LEARN HOW YOU CAN SPEED UP PRODUCTION.
SEND TODAY FOR DESCRIPTIVE BULLETIN 50-105.

Sperry **SPERRY PRODUCTS, INC.**
DANBURY, CONNECTICUT

BREVITY—Identify by IEN - 12648 If you write the maker

NEW SELF-CONTAINED HUMIDIFIER

Evaporates up to 8 gallons of water per hour using ¼ horsepower motor.

The new Bahnson **Type E Humidifier** is designed for efficient humidification in industrial and commercial spaces.

CHECK THESE FEATURES!

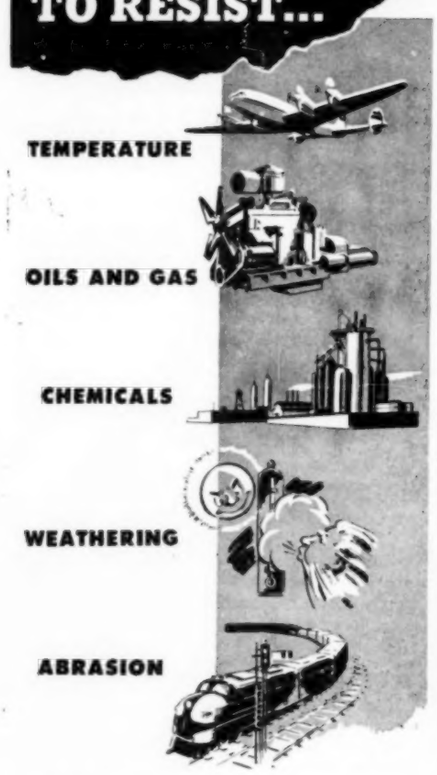
- Automatically controlled at desired relative humidity.
- Requires only 1/4" water supply line, 110 or 220 volt single phase current.
- Simple to install—your men can do it.
- Directional control of distributed moist air.
- Instantly adjustable rate of evaporation to suit your requirements—or modulating control.
- Centrifugal atomization of ordinary city water for highest efficiency—lowest cost.
- Durably constructed, non-corrosive, diameter 17", dry weight under 50 lbs.

FOR TRULY DEPENDABLE LOW COST HUMIDIFICATION

Bahnson Company
ENGINEERS AND MANUFACTURERS
WINSTON-SALEM, N. C.

BREVITY—Identify by IEN - 12649 If you write the maker

RUBBER PARTS TO RESIST...



STALWART-developed rubber compounds are available in mass produced parts to meet your applicational requirements.

Supplied in precision molded, extruded, die-cut and machine or hand-cut shapes, STALWART compounds retain their physical, chemical and dielectric properties regardless of adverse conditions.

STALWART rubber parts can have varying degrees of durometer, tensile strength, and elongation to meet individual, S.A.E. or A.S.T.M. specifications.

Write today for 16-page, multi-colored Catalog No. 51-SR-1

STALWART RUBBER COMPANY
12152 Northfield Road • Bedford, Ohio

BREVITY—Identify by IEN - 12651 If you write the maker

COMMUNICATING . . Sound recorder and transcriber for dictation on tape

Source: BELL SOUND SYSTEM INC.
553-57 Marion Road, Columbus 7, Ohio

Re-Cord-O-fone Model RT-65-B is a new tape recorder and transcribing or play-back instrument. It measures 15 by 16 by 8½ in. and weighs 33 pounds. It connects to a radio, phonograph or microphone for recording purposes. It operates at any of three speeds to record on plastic or paper tape using 5 or 7-in. reels. The slowest speed provides 4 hrs. of continuous recording.

The double track tape can be recorded or erased one half at a time and the tape can be used repeatedly. Erasing is automatic as recording proceeds so it is not possible to record double. An interlock switch prevents accidental erasing when the tape is being rewound. Controls are grouped at the front of the housing. Operation is on 110-volt 60-cycle ac.

Equipment includes a crystal microphone, a 6-ft. cable, one empty 5-in. reel, one full 5-in. reel of plastic tape and an instruction manual. The housing provides storage space for these and other accessories.

BREVITY—Identify by IEN - 12652 If you write the maker

PAINTING . . Aluminum powder in liquid vehicle for hot surfaces

Source: ILLINOIS BRONZE POWDER CO.
2021-25 S. Clark St., Chicago 6, Ill.

Paint vehicle is patented

Hi-Temp is a new ready-mixed aluminum paint for surfaces subject to heat as high as 1,200 deg. F. The paint is applied by brush or spray. It dries in one to two hours to a coating that is resistant to peeling, discoloring, blistering. Applications are on surfaces such as furnace fronts, boilers, ovens, smoke stacks, engines, steam lines.

BREVITY—Identify by IEN - 12653 If you write the maker

DRILLING . . Portable electric tool mounts ⅜ in. chuck and side handle

Source: CUMMINS PORTABLE TOOLS DIV.
4738-42 N. Ravenswood Ave., Chicago 40, Ill.

New design of the company's Model-115 portable electric drill is now equipped with a ⅜-in. chuck as standard equipment. The drill weighs 4¼ lb., is driven by a universal 110-volt motor. The swivel-ball side handle permits two-hand operation of the drill.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

BREVITY—Identify by IEN - 12654 If you write the maker

MELRATH GASKETS

DRUM PLUG GASKETS

Made from any desired material or combination of materials. Resilient — tightened with little torque — remain tight under all temperature changes. For gasoline, kerosene, benzol, alcohol, fuel oil, lubricating oil, paraffine, paint, lacquer, dye, chemicals, etc.

There's a Melrath Gasket for Every Purpose!

MELRATH SUPPLY & GASKET CO., INC.
3501 MEMPHIS ST., PHILADELPHIA 34, PA.

BREVITY—Identify by IEN - 12655 If you write the maker

$1907 G-E capacitor investment saves $2700 a year

Completely paid off in eight months—that's the experience the Empire Plow Company of Cleveland, Ohio, had when they installed 240-kvar of General Electric capacitors.

The power factor rose from a money-wasting 61% to better than 97% after the capacitor installation. This improvement in power factor meant real savings in the power bill. The entire installation—capacitors, switches and labor—cost $1907. The savings have been $2700 in the first year alone.

A quick check may show that you can do the same—especially if your power factor is below 85%. Also, capacitors will usually improve voltage conditions, allow for expansion of your electrical load, and relieve feeders and transformers of overload. Call your nearest G-E Sales Office or write for information on how capacitors can help you. Address *Sec. L407-197, Apparatus Department, General Electric Company, Schenectady 5, N. Y.*

GENERAL ELECTRIC

BREVITY—Identify by IEN - 12656 If you write the maker

PROBLEM:

How to get a good contact surface on Magnesium to provide proper joint conductivity?

GENERAL PLATE

Provided the solution with "Copper on Magnesium . . . A composite Metal Combination"

Recently the General Plate was asked how to overcome the difficulty of attaching leads to magnesium and attain good joint conductivity.

General Plate Engineers provided the solution by bonding a thin layer of "copper on magnesium." This new type clad metal gave the contact surface required, as well as a surface on which soft soldering operations were readily performed.

No matter what your problem, it will pay you to consult with General Plate. Their vast experience in cladding precious to base metals, or base to base metals can overcome your problems . . . often reduce costs.

General Plate Products include . . . Precious metals clad to base metals, Base metals clad to base metals, Silver solders, Composite contacts, buttons and rivets, Truflex® Thermostat Metals, Alcuplate®, Platinum fabrication and refining, Age-hardenable, #720 Manganese Alloy. Write for information.

GENERAL PLATE
Division of Metals & Controls Corp.
712 Forest Street, Attleboro, Mass.

BREVITY—Identify by IEN - 12657 If you write the maker

You'll want this
FACT-FUL LITERATURE
on Carbon, Alloy, and Stainless
B&W
MECHANICAL TUBING
—seamless and welded—

CHECK—CLIP—MAIL this listing for free copies

- [ ] TB-324 –Hundreds of Different Parts Made Economically from B&W Mechanical Tubing.
- [ ] TB-333 –Better Products at a Saving from B&W ERW Carbon Steel Mechanical Tubing.
- [ ] TDC-119D–Combined Standard Steel lists of AISI and SAE.
- [ ] TDC-141 –B&W Alloy Steel Tubing, Medium Carbon Grades (Full-Hardening).
- [ ] TDC-149 –B&W Alloy Steel Tubing, Low-Carbon Grades (Carburizing).

THE BABCOCK & WILCOX TUBE COMPANY
Executive Offices: Beaver Falls, Pa. General Offices & Plants: Beaver Falls, Pa.—Seamless Tubing; Welded Stainless Tubing
Alliance, Ohio—Welded Carbon Steel Tubing

▼ BREVITY—Identify by IEN - 12658 if you write the maker ▲▼

Smartest Buy for plant supply

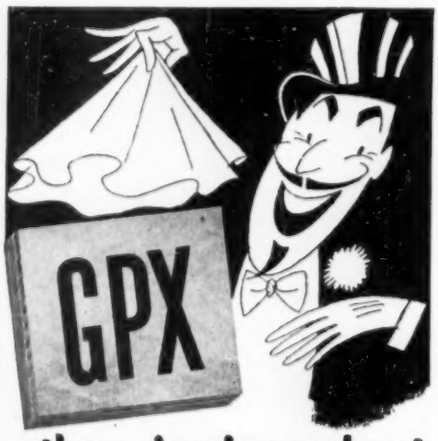
The BIG 10-ROLL PACKAGE

Every roll sealed in cellophane stays factory-fresh. Ask your dealer for this handy package of the tape that goes further, wraps right, lasts longer. Jenkins Bros. (Rubber Div.), 100 Park Ave., New York 17.

JENKINS Gold Seal Tape
FRICTION . . . RUBBER

MADE BY JENKINS BROS MAKERS OF FAMOUS JENKINS VALVES

▼ BREVITY—Identify by IEN - 12659 if you write the maker ▲▼



the miracle-worker!

GPX—Georgia-Pacific's plastic-faced plywood, is performing production miracles . . . GPX versatility is apparent as new applications of this unique product are discovered.

GPX combines the strength and durability of plywood and the armor-hard surface properties of plastic. The plastic overlay is applied under heat and pressure at the time the plywood is being bonded. Result: the plastic flows, condenses and sets, forming a hard plastic surface that *is part of the plywood itself.*

GPX is incomparable for concrete forms . . . GPX has made the revolutionary Unicel box car a reality . . . GPX's flawless surface and its GPX is the perfect material for tables, counters, and most work surfaces.

The GPX Use Folder will aid you in determining where Georgia-Pacific's GPX can solve your construction and production problems. Send for this booklet and see what miracles GPX can perform for you.

GP GEORGIA—PACIFIC PLYWOOD COMPANY

OFFICES OR WAREHOUSES IN: Augusta, Birmingham, Boston, Chicago, Columbia, Louisville, Memphis, Nashville, Newark, Olympia, Orlando, Philadelphia, Pittsburgh, Portland, Raleigh, Richmond, Savannah.

For complete data, fill in and mail this coupon today

Georgia-Pacific Plywood Company
Plastic Plywood Division
Marsh Street
Port Newark 5, N. J.

Please send me the GPX Use Folder.

NAME .....
FIRM NAME .....
.....
FIRM ADDRESS .....
CITY ..... STATE .....
POSITION .....

IDEAS FOR YOU

▼ IEN-12661 ▲▼

Tenney Engineering built a big one, a test chamber that is, for RCA. Inside it's 28 by 18 by 14 feet. You can make like sea level or 13 miles up. You can freeze down to 85 below zero or cook at 185 above. You can dry out at 10 or soak around 95 per cent of relative humidity.

▼ IEN-12662 ▲▼

"Burn it clean" says Burdett Manufacturing Co., when you ask about removing grease and oil from work that you want to surface finish. How? By simply running it through an oven for a few minutes in which the company's radiant gas burners are holding the temperature around 650 degrees. The surface film dries up, leaves an excellent base for paint.

▼ IEN-12663 ▲▼

Nylon teeth—in a gear, that is—bite into cost figures for a 65 per cent saving as compared to a steel-and-plastic gear formerly used by General Electric in its oscillating fan. GE says it can mold nylon gears to order for you.

▼ IEN-12664 ▲▼

Warner electric brakes on textile brushing machines now help cotton cloth to get a nice uniform haircut. These machines take the cotton cloth as it comes from the mill and brush up the threads so they stand on end for shearing. The brakes keep the machines from jamming by stopping all the brushing rolls at once. Any machine in your plant have a number of rolls that need to be stopped at once?

▼ IEN-12665 ▲▼

Glass that can be precision machined into intricate cut patterns by application of heat, hydrofluoric acid and ultraviolet light is announced by Corning. The glass is photosensitive.

▼ IEN-12666 ▲▼

Gas turbine compresses its own combustion air and burns injected gasoline to provide hot gases that drive a radial-flow rotor. Solar Aircraft is making it at present for the Navy to drive pumps and small electric generators. Assembly is inside a space measuring 2 by 2 by 2 feet. Rating is 45 horsepower. Turbine speed is 40,000 rpm. Bulletin provides details.

▼ IEN-12667 ▲▼

Fractions and their decimal equivalents by sixty-fourths from 1 to 63 are printed on a decalcomania measuring 6 by 1¼ inches. Meyercord Company will send you one. Black and red type appear on a white background. Washable, colorfast, durable, just dip it in water and smooth it over a surface wherever you want it.

▼ IEN-12668 ▲▼

Aisles too narrow to stack pallet loads at right angles? Then set the loads at an angle less than 90 degrees as Dobeckmun Company is doing according to Baker-Raulang. The diagonal tiers permit truck operators to pick up and handle with half a turn.

▼ BREVITY—Identify by IEN - 12669 if you write the maker ▲▼

MEASURE OVER 50 LIQUIDS WITH METER SURETY

You can batch mix, blend or process most any liquid with Rockwell industrial meters. You can do it quicker and more accurately. You'll gain the safety of a closed piping system. *You'll save money!* Get facts now. Ask for bulletin.

Sizes ⅛ to 3" in suitable materials. Option on type of register. Automatic shutoff controls available.

Dept. M
ROCKWELL MANUFACTURING CO.
Pittsburgh 8, Pa.

▼ BREVITY—Identify by IEN - 12670 if you write the maker ▲▼

CM PULLER

. . . the handiest tool in the plant

Just think of the jobs you can do with this sturdy, low-cost puller

LIFTS OR PULLS at any angle up to 12,000 POUNDS

⅜ ton model weighs only 13 lbs. One of the handiest tools ever devised. Does thousands of lifting and pulling jobs. Eliminates unsafe, makeshift methods. Gets work done fast. Costs very little. Pays for itself in countless ways. *Ask your distributor to demonstrate it for you.*

4 sizes ⅜, 1½, 3 and 6 ton

Write for this folder

CHISHOLM-MOORE HOIST CORPORATION
(Affiliated with Columbus McKinnon Chain Corporation)
GENERAL OFFICES AND FACTORIES: TONAWANDA, N. Y.
Sales Offices: New York, Chicago, Cleveland • Distributors Everywhere

▼ BREVITY—Identify by IEN - 12671 if you write the maker ▲▼

SHERARDUCT—THE *fortified* RIGID STEEL CONDUIT

SHERARDUCT—*fortified* against rust and corrosion by a zinc coating alloyed to the steel by the "Sherardizing Process"...even the *threads* are protected.

SHERARDUCT—*further fortified* against acids and other corrosive agents by the smooth "Shera-Solution" coating baked on for endurance.

SHERARDUCT—will not crack or split, because the coating is an integral part of the steel itself.

Sold through leading electrical wholesalers

National Electric
PRODUCTS CORPORATION
1352 Chamber of Commerce Bldg., Pittsburgh 19, Pa.

▼ BREVITY—Identify by IEN - 12673 If you write the maker ▲▼

NO INSTRUCTIONS NECESSARY WITH THIS EXTINGUISHER!

IT'S A RANDOLPH!

From Bracket to Blaze in split seconds! No valves to turn, no nozzles to adjust; just point and press your thumb and Randolph's cloud of snowy CO_2 kills fire instantly. Non-damaging, non-toxic, won't conduct electricity, deteriorate or freeze. A complete line of extinguishers. Underwriters' approved. Write for catalog to RANDOLPH LABORATORIES, INC. 6 E. Kinzie St. Chicago 11, Ill.

▼ BREVITY—Identify by IEN - 12674 If you write the maker ▲▼

New Fabric—Longer Wear

M. S. A. ChemKlos the work clothes that wear ON when others wear OUT!

M.S.A. ChemKlos available now as shirts, trousers and coveralls.

MADE OF DYNEL the New Fabric

M.S.A. ChemKlos are rolling up impressive durability records in acid and caustic operations where ordinary work clothes eat away or wear away after comparatively short periods. In many instances, users report that ChemKlos last at least 8 to 10 times longer.

ChemKlos are inherently chemical resistant . . . the greater life is *in the fabric*, not added by a treating process—unaffected by cleaning or washing. Sturdy bar tacking at all points of strain, plus double stitching with acid resistant thread keep seams together. Buttons are made of acid and caustic resistant plastic for longer service. Stubborn grease, oil and wax spots are safely and easily removed.

You'll find it profitable to investigate the superior lasting qualities of M.S.A. ChemKlos. Our Bulletin No. CF-28 gives complete details on sizes, construction features. Write for your copy now.

Resists: ACIDS CAUSTICS WEAR MOTHS MILDEW SHRINKAGE SNAGGING TEARING

For Work Clothes that Last and Last Insist on this Label

ACID & CAUSTIC RESISTANT... H ChemKlos OH MINE SAFETY APPLIANCES CO. PITTSBURGH, PENNSYLVANIA

MINE SAFETY APPLIANCES COMPANY
BRADDOCK, THOMAS AND MEADE STS.
PITTSBURGH 8, PA.
At your service: 54 Branch Offices in the United States and Canada

MSA SAFETY EQUIPMENT HEADQUARTERS

Call the M.S.A. man on your every safety problem . . . his job is to help you

IDEAS FOR YOU

▼ IEN - 12676 ▲▼

Carbide as a hardfacing material for metal parts in promised by Carboloy following laboratory development of a weldable tungsten carbide, now in experimental production.

▼ IEN - 12677 ▲▼

Radioactive materials, too deadly to be approached directly, are set up for study by remote means back of a thick concrete wall. Light is directed from an arc lamp along an interrupted path through the wall by American Optical lenses. The light is reflected from the specimen and comes out through another series of lenses to form a magnified image. The scientists get their data and no one is hurt.

▼ IEN - 12678 ▲▼

Forty Plus is a New York club organized to bring business men needing talent and the club's members together. A directory is published at intervals to list the members' individual qualifications. Just about every industrial activity can be found in the list.

▼ IEN - 12679 ▲▼

Dies for bending and forming in a press brake can be made to render service several times normal by selective induction hardening. The fact was discovered by Dreis & Krump in Chicago in the course of its manufacture of the tools. Added cost is negligible.

▼ IEN - 12680 ▲▼

Equipment for blast cleaning and dust collecting was on special display at Pangborn in Hagerstown during a recent open-house put on by the company. The plant was shown at work. A special issue of the company's house publication featured the event.

▼ IEN - 12681 ▲▼

Door-to-door delivery service has been set up by Sharon Bolt and Screw Company in selected counties in Massachusetts. Delivery trucks have been equipped with shelves and compartments to handle the products. Drivers are prepared to check stocks, to keep them clean, up to date, and to supply refills.

▼ IEN - 12682 ▲▼

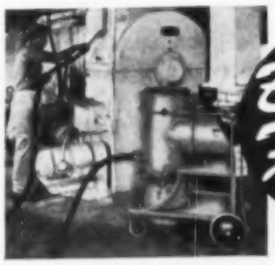
Transparent plastic sheet, Bakelite's Vinylite Rigid, is being used by a paper box maker to line up for register between dies and printing plates. Lines made by the dies with carbon paper on the sheet show through, serve as guides. Sheet could be similarly used to transfer anchor points from press bolsters.

▼ IEN - 12683 ▲▼

Koldflo trade names new cold-extruding process that converts steel bar stock into various products such as artillery shells, pressure cylinders, gear blanks, pulley hubs, wheel parts. The process starts with a work piece of calculated weight and handles it without producing flash or butt ends. Dimensions are accurate. Surfaces are smooth. How? Mullins Manufacturing Corporation is not saying but is prepared to license.

▼ BREVITY—Identify by IEN - 12684 If you write the maker ▲▼

▼ BREVITY—Identify by IEN - 12685 If you write the maker ▲▼



Better Foods WITH SPENCER VACUUM

Basic plant sanitation should begin at the source of the hazard. If dust is generated by processes, Spencer Vacuum can be applied at the tool, or even inside the machine. If it comes in with your raw materials, it can be removed in the process of totally enclosed vacuum conveying. If it's gas from welding fdmes, or tanks, Spencer can reduce the hazard at its source. And if it's vermin, Spencer will remove the nests, or with reverse connections, spray insecticides.

And above all, Spencer Vacuum keeps the floors, walls, overhead structures and all machinery constantly clean. Ask for Bulletin No. 125D on Spencer units from 1½ to 100 horsepower.

THE SPENCER TURBINE COMPANY • HARTFORD 6, CONNECTICUT
SPENCER HARTFORD
439-J

▼ BREVITY—Identify by IEN - 12686 If you write the maker ▲▼

Automatic serve-up packages

For Wiping and Polishing

Wiping precision instruments

Polishing machined parts

Let clean, *disposable* KIMWIPES* industrial wiping tissues standardize—and economize—your cleaning operation. Soft, yet strong, they're ideal for cleaning precision tools and instruments. Recommended for use on finely finished surfaces. And highly absorbent KIMWIPES remove dust, dirt, grease and oil—quickly, safely.

The Bureau of Federal Supply stocks Kimwipes size 15" x 18" in all Supply Centers under stock item #52P23121-800.

Kimwipes INDUSTRIAL WIPING TISSUES

*T. M. REG. U. S. PAT. OFF. & CAN.

KIMBERLY-CLARK CORPORATION, IEN-1251
Neenah, Wisconsin
Please send me Kimwipes literature.

Name .....
Firm Name .....
Address .....
City ..... Zone ..... State .....

BREVITY—Identify by IEN - 12688 if you write the maker

Here are a few good reasons why Ex-Cell-O Drill Jig Bushings last longer and perform better:

1. Premium grade tool steel is selected for wear resistance and heat treated to 62-64 Rockwell "C".
2. Every bushing must measure up to Ex-Cell-O precision standards, as well as to A.S.A. standards.
3. High finish is ground on inside and outside diameters, and under the head for perfect bearing.

To satisfy the needs of your purchasing and engineering departments ask for an adequate supply of Ex-Cell-O Bushing Catalogs.

EX-CELL-O CORPORATION
DETROIT 32, MICHIGAN

MANUFACTURERS OF PRECISION MACHINE TOOLS • CUTTING TOOLS • RAILROAD PINS AND BUSHINGS • DRILL JIG BUSHINGS • AIRCRAFT AND MISCELLANEOUS PRODUCTION PARTS • DAIRY EQUIPMENT

51-54

BREVITY—Identify by IEN - 12689 if you write the maker

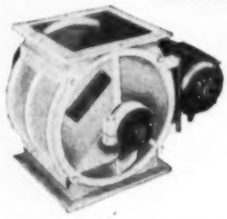
SPROUT WALDRON MUNCY, PENNSYLVANIA

ROTARY FEEDERS

CONTROL RATE OF FLOW

ACT AS PERCENTAGE FEEDERS

SERVE AS AIR LOCKS



163

Standard or custom made units to be used ahead of grinders, mixers, elevators, dust collectors, etc., or underneath bins and storage tanks. These dual purpose Feeders have a wide variety of applications in the process industries. Write today for literature. Sprout-Waldron & Co., Inc., 5 Waldron Street, Muncy, Penna.

Vertical Mixers, Attrition Mills, Rotary Feeders, Ribbon Type Mixers, Crushers, Knife Cutters, Continuous Mixers, Roller Mills, Separators, Pulleys

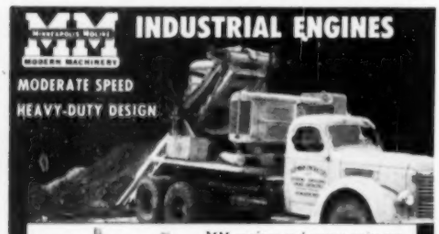
SPROUT-WALDRON

BREVITY—Identify by IEN - 12690 if you write the maker

MINNEAPOLIS MOLINE MODERN MACHINERY

INDUSTRIAL ENGINES

MODERATE SPEED
HEAVY-DUTY DESIGN



MM engines and power units are used in several sizes as original power installations for heavy and continuous service equipment. Standardization of many parts results in high production for finest quality, low cost per hp, and superior repair parts service. Design flexibility and standard SAE housings provide low-cost installations for any type of drive required.

Have your shovels, trenchers, graders, hoists, crushers, pumps, generators, and drill rigs equipped with MM POWER.

25-230 hp

MINNEAPOLIS-MOLINE
MINNEAPOLIS 1, MINNESOTA

BREVITY—Identify by IEN - 12691 if you write the maker

CIRCUIT BREAKER . . Panel assembly of plug-in units, 15 to 100 amperes

Source: SQUARE D CO.
6058-62 Rivard St., Detroit 11, Mich.

Ample wiring space

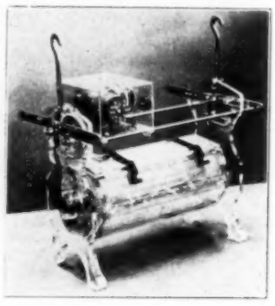
Type MHP designates new "plug-in" distribution panelette in which standard 110 and 220-volt ac. circuit breakers are plugged onto silvered bus bars to complete a desired circuit arrangement. The breakers are available in 1, 2 and 3-pole assembly. They provide thermal-magnetic protection.

The thermal trip holds against harmless momentary overload but opens the circuit if an overload continues. The magnetic trip functions instantly on both moderate and heavy short circuits. Four standard basic devices permit selection from stock to meet given requirements. A selection of knock-outs also is provided in the Code-gage galvanized-steel boxes. It bears Underwriters' Laboratories approval.

BREVITY—Identify by IEN - 12692 if you write the maker

PLATING . . Miniature barrel unit of Plexiglas to process small parts

Source: HANSON-VAN WINKLE-MUNNING CO.
100 Filbag St., Matawan, N. J.



You can see the work

Two sizes of Plexiglas cylinder in this new machine measure 6 and 8 in. in diameter, 12 and 18 in. in length. The cylinder is assembled on Plexiglas legs. It is connected by gears of the same material to a 1/15-hp. motor for operation on 110 or 220-volt single-phase 60-cycle ac. The unit can be employed with acid or alkaline solutions at temperatures not exceeding 185 deg. F. A. rheostat controls motor speed so the cylinder can be operated as required.

BREVITY—Identify by IEN - 12693 if you write the maker

SPRINGS . . Plastic slide calculator to determine dimensions and performance of coil springs

American Hydromath Co.
145 W. 57th St., 5th Floor, New York 19, N. Y.

Helical compression and extension-spring data can be figured with the aid of new "Calculaide Spring Computer", a 11⅝ by 5-in. Vinylite unit that lists at $4. It correlates in one setting outside diameter of the spring, wire size in diameter and gage number, number of active coils, material and its torsional modulus, maximum shear stress, load and deflection.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 12694 if you write the maker

Practical Lab Men Like Their Despatch OVENS

For development work and new product testing, Minn. Mining technicians approve the wide temperature range . . . variety of raw materials handled . . . capacity for large samples.

- Air velocity control
- Guaranteed heat elements —2700 to 12,000 Watts
- Precision indicating control
- Six models in wide range of capacities
- Accurate—speedy—rugged

Manufacturers of Ovens for all purposes

Minnesota Mining & Manufacturing Company uses Despatch "V" Ovens in research and control of "3M" products and applications. Users of Despatch Ovens from its earliest days, this well-known company now has scores of them in its various departments. For information on how Despatch can be put to work on your laboratory and production problems, *write for Bulletin No. 106.*

DESPATCH OVEN CO.
Established 1921

337 Despatch Building
Minneapolis 14, Minnesota

BREVITY—Identify by IEN - 12695 if you write the maker

EASTON

a dependable design and construction service in industrial cars

A-1024

EASTON CAR & CONSTRUCTION CO. • EASTON, PA.
NEW YORK • PHILADELPHIA • PITTSBURGH

BREVITY—Identify by IEN - 12696 if you write the maker

New Improved E-Z Set BORING TOOL

Developed for close-tolerance operations

Today's demand for accurate, high-speed production of vital parts can be met with the new MAXWELL E-Z Set Boring Tool.

Micrometer barrel-type adjustment assures rapid, simplified set-up in jig-bore, milling machine, boring mill, automatic, etc. Featuring adjustable offset to 0.0001-inch, the new MAXWELL E-Z Set Boring Tool is available in three models with maximum boring bar capacities of ½, 1 and 1½ inches, respectively. This set covers a boring range from ⅜ to 20 inches. Illustration shows three cutter positions employed to obtain this wide range.

Write today for catalog No. 30.

THE MAXWELL COMPANY
391 Broadway • Bedford, Ohio

BREVITY—Identify by IEN - 12697 if you write the maker

MELTS SNOW! THAWS ICE!

ICE REM

ice and snow melting chemical crystals

- 30 times greater thawing capacity than salt
- safe • fast-acting

SPECO, Inc.
7308 ASSOCIATE AVE. • CLEVELAND 9, OHIO
"manufacturers of RUSTREM anti-rust paint"

BREVITY—Identify by IEN - 12698 if you write the maker

Put all your new machinery on ISOMODE* PADS

1. For faster installation
2. For quieter plant
3. For less maintenance

That's right—vibration absorbing Isomode* Pads are the easy way to save time, labor and operating costs with new equipment and in new plants.

Engineered by vibration specialists, these 5/16" pads have proved their ability to absorb disturbance normally transmitted to floor—even shocks from large punch presses! Locate machines *anywhere*. Usually no need for bolting. Simply cut to size and install under legs or base.

And the results are plain to see: Less machine maintenance, less noise, reduced building damage. Write for full facts. *Reg. U. S. Pat. Off.

THE MB MANUFACTURING COMPANY, INC.
1064 State St., New Haven 11, Conn.

BREVITY—Identify by IEN - 12699 if you write the maker

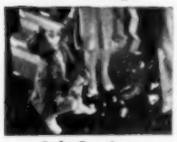
"Don't worry, my dear. The trays here are all made of slip-resistant 4-WAY Safety-Plate."

For greater safety under foot, in your plant and on your products

Inland 4-Way® Safety Plate

Adds Strength

Easy to Fabricate



Safe Footing

Easy to Clean

INLAND

STOCKED BY LEADING STEEL WAREHOUSES

INLAND STEEL COMPANY, Dept. IEN-123
38 So. Dearborn St., Chicago 3, Ill.
Sales Offices: Chicago, Davenport, Detroit, Indianapolis, Kansas City, Milwaukee, New York, St. Louis and St. Paul.

New Bulletin with New Ideas—Just Out! Bulletin F1. Complete engineering and application data. Send for it!

BREVITY—Identify by IEN - 12701 if you write the maker

PRINTING . . Photocopy machine for written, printed, drawn material

Source: REMINGTON RAND INC.
315 Fourth Ave., Room 1618, New York 10, N. Y.

Work positions under lid

Copy area measures 30 by 42 in. and 42 by 60 in. in two new models of the company's vacuum-seal Portagraph, previously described IEN-5398-47. Both are furnished in American walnut cabinets with drawers for paper and supplies as well as a hinged section that pulls out to present the controls at the machine front.

A new layout of white lamps, in a single set operating on one circuit, is equipped with rheostat control to supply correct illumination for each type of reproduction. Two additional lights in the instrument panel provide subdued illumination for the dark room. One light illuminates the timer dial. The other permits reading the vacuum gage. A pump in the housing develops vacuum to 25 in. of mercury to assure flat contact between the original and the sensitized paper.

BREVITY—Identify by IEN - 12702 if you write the maker

TUBE . . Plastic coated metal, round and square section for product use

Source: SAMUEL MOORE & CO.
51 Moore St., Mantua, Ohio

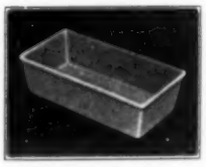
Warm to touch
free from static

Metal tube with vinyl or polyethylene-plastic exterior coating is now available in a range of sizes, colors and finishes in round and square sections. The announcement follows initial application of the plastic on a contract basis, previously described IEN-3635-51. Applications include use of the tube in furniture, appliances, garment rails, grab rails, stanchions, automotive parts, industrial instrument lines, electric conduit. The tube can be any specified metal in seamless construction or with welded, lap or butt seams. Dekoron is the trade name applied to the new tube.

BREVITY—Identify by IEN - 12703 if you write the maker

HANDLING . . Molded plastic tray, resistant to acids, alkalis, solvents

Source: DYNAKON CORP.
5507-11 Hough Ave., Cleveland 3, Ohio



Standard is white

Type A1B is a new molded-plastic tray measuring 11⅛ by 5½ by 3 inches. It is recommended for chemical drying and storage and for parts handling in the place of similar sizes of metal trays. The chemically-resistant plastic is not subject to attack by many acids and salts, mild alkalis and organic solvents.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 12704 if you write the maker

Your Workers Look to You For *Sure* Eye Protection

Give Them WATCHEMOKET eye SAVERS

Supply your workers with Eye-Savers — the finest in plastic eye protection! Eye-Saver shatterproof lenses have great impact strength and are optically perfect to give *sure* eye safety. Workers especially like the light, comfortable fit and good looks of every Eye-Saver goggle. Available from your safety supplier in many different styles to meet all eye hazards. Model 7 (illustrated) has become the standard of industry for heavy duty applications.

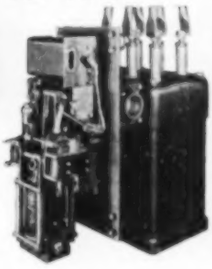
FREE! *Send for magazine article giving impartial advice on best uses of plastic eye protection. Eye-Savers catalog also included.*

WATCHEMOKET OPTICAL CO., INC.
DEPT. 8, PROVIDENCE, RHODE ISLAND
Producers & Originators of Practical Plastic Eye Protection

BREVITY—Identify by IEN - 12705 if you write the maker

FULL ELECTRICAL PROTECTION that Lasts for Years

ALLIS-CHALMERS INDOOR OIL CIRCUIT BREAKERS



INDUSTRIAL ELECTRICAL SERVICE
2300 to 13,800 volts — Up to 500,000 kva interrupting capacity

Type D-20, 7.2 kv, 600 amp, 50,000 kva interrupting capacity oil circuit breaker with solenoid operator and automatic trip.

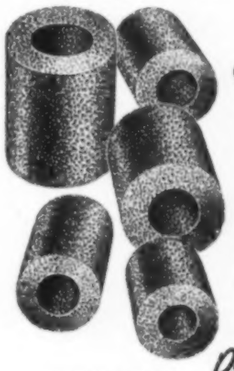
FOR DEPENDABLE PROTECTION of your electrical equipment, investigate the Allis-Chalmers breaker type that will meet your requirements.

Low maintenance, long life and reliable performance in these modern breakers are the result of over 50 years circuit breaker experience (air or oil). Allis-Chalmers circuit breakers for industry and electric power utilities range from 2500 to 230,000 volts, 15,000 to 10,000,000 kva interrupting capacity.

For complete information on the breaker for your requirements, contact your nearby A-C sales office or write Allis-Chalmers, Milwaukee 1, Wisconsin, specifying voltage and interrupting capacity. A-3304

ALLIS-CHALMERS A-C

BREVITY—Identify by IEN - 12706 if you write the maker



CHICAGO Internal Grinding WHEELS

Rapid Delivery

MANUFACTURED TO ORDER

Chicago Internal Grinding Wheels produce better finishes with longer wheel life and cutting action. They're your best buy—"tailor made" to your specifications and speedily delivered.

Advanced production methods assure you perfectly balanced Internal Wheels to meet rigid finishing requirements. Faster delivery . . . with overnight service for special jobs.

WRITE TODAY for full details on all Chicago Wheel products . . . and *free* sample Chicago Internal Grinding Wheel.

CHICAGO WHEEL & MFG. CO.
Dept. H, 1191 West Monroe St.
Chicago 7, Illinois

BREVITY—Identify by IEN - 12707 if you write the maker

PIPE AND BOLT THREADERS
New Line! 4 Models! 4 Choices!

No. 782 PIPE THREADER
Stationary Die-Head
PIPE range ¼" to 2"
BOLT range ¼" to 1½"

No. 782-R PIPE THREADER
Revolving Die-Head
(Manually Operated) and Open-Type Vise Same range as No. 782 model.

No. 781-A BOLT THREADER
Automatic Revolving Die-Head
and Open-Type Vise
BOLT range ¼" to 1½"
PIPE range ¼" to 1¼"

No. 782-A BOLT THREADER
Automatic Revolving Die-Head
and Open-Type Vise
BOLT range ¼" to 1½"
PIPE range ¼" to 2"

The "RAPIDUCTION JR." Line

Basic features of these machines are the same. They differ chiefly in the type of Die-Heads and Work Holders.

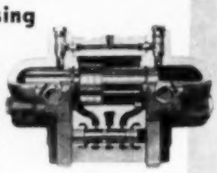
Each "RAPIDUCTION JR." model is designed for a PRIMARY purpose. When YOUR exact needs are known, it's EASY to select the BEST machine to fit the job. Write us for complete details.

OSTER THE OSTER MFG. COMPANY
2053 E. 61st St., Cleveland 3, Ohio, U.S.A.

BREVITY—Identify by IEN - 12708 If you write the maker

Multiply Pressure

without increasing horsepower



On most presses and in many other applications, pressure requirements change during the operating cycle. The Racine "Variable Volume" low pressure pump with a Racine Pressure Booster can be used to develop and hold up to 5000 psi. The horsepower input does not exceed the power needed to operate the pump at its low pressure setting.

This means lower first cost, less horsepower consumption, reduced cylinder sizes — a more compact over-all design. Pressure and volume delivered can be controlled by one of the built-in governors that are standard for all RACINE pumps.

Write for the new 3-color Catalog P-10-D covering RACINE'S complete line of "Variable Volume" Pumps, Valves and Pressure Boosters.

OTHER RACINE HYDRAULIC PRODUCTS

Four-Way Valves — Variable Volume Pumps — Pump & Reservoir Units

RACINE TOOL AND MACHINE CO.
1761 State Street, RACINE, WISCONSIN, U. S. A.

BREVITY—Identify by IEN - 12709 If you write the maker

ELLIOTT TWIN STRAINERS
TYPE "A"

You can install them anywhere!

■ Twin strainers are most adaptable. They can be connected horizontally or vertically, as conditions require . . . Valve handwheels can be changed from one side of unit to the other if need warrants, or chain drive mechanism can be added, all without taking the strainer out of the line. For especially corrosive conditions, a "wear plate" valve seat is provided between strainer body and valve housing, for quick replacement when needed.

Get all the story. Write for the Type A Twin Strainer Bulletin.

SIZES FROM 1" UP—125 to 250 W. PRESSURES

A-314

ELLIOTT COMPANY
Accessories Dept., JEANNETTE, PA.
DISTRICT OFFICES IN PRINCIPAL CITIES

BREVITY—Identify by IEN - 12710 If you write the maker

MAINTAIN CONSTANT VOLTAGE
regardless of Line or Load changes
with STABILINE AUTOMATIC VOLTAGE REGULATORS

TYPE EM
(ELECTRO MECHANICAL)
Zero waveform distortion, high efficiency, no critical adjustments. Available in 115, 230, 460 volts, single and three phase models in ratings from 2 to 100 KVA.

TYPE IE
(INSTANTANEOUS ELECTRONIC)
No moving parts. Output voltage held to ±.1% for line variations; to ±.15% for load changes. Standard models available in 115, 230 volts, single phase, 50 and 60 cycles, in ratings from 250 VA to 5 KVA.

THE SUPERIOR ELECTRIC CO.
BRISTOL, CONNECTICUT

1212 CHURCH ST., BRISTOL, CONN.

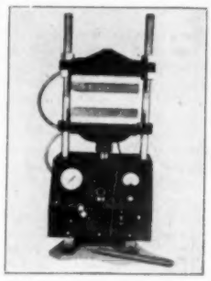
☐ Please send Bulletin S351.

NAME
CO. NAME
CO. ADDRESS
CITY
ZONE STATE

BREVITY—Identify by IEN - 12711 If you write the maker

PRESS . . Hand hydraulic design for laboratory use, has 6 ton rating

Source: WABASH METAL PRODUCTS CO.
1567-71 Morris St., Dept. IEN, Wabash, Ind.



Chromium plated columns

Throat measures 6 in. with maximum opening between the platens at 10 in. in this new Model 12-10 laboratory hydraulic press. Platen area is 7 by 10 inches. Width between the columns is 11 inches. Overall height is 36 inches. Pressure on the ram is indicated by a gage on the housing face. A second gage reads temperature in the electrically-heated platen.

Reading is selected for one platen or the other by operating a toggle switch. Provision also is made to insert thermometers in wells in each platen. Temperature is controlled by a thermostat with input connection from a 110 or 220-volt ac. line. Maximum temperature is 600 deg. F. The press measures 10½ by 15 inches. It weighs 275 pounds.

BREVITY—Identify by IEN - 12712 If you write the maker

HYGROMETER . . Dial type indicator reads per cent of relative humidity

Source: FEE & STEMWEDEL INC.
2208-12 Wabansia Ave., Dept. EN, Chicago 47, Ill.

Lists at $6

Airguide No. 605 is a new dial-type hygrometer measuring 4⅝ in. in diameter by 1½ in. from front to back. It is assembled in a formed-metal case and back, mounts a chromium-plated bezel and convex crystal. The metal dial is black and carries white markings in connection with a white indicating pointer. The unit will operate in temperatures to 175 deg. F. It includes a floating type of humidity-sensitive element that operates on the absorption principle.

BREVITY—Identify by IEN - 12713 If you write the maker

PROTECTING . . How to prevent accidents described in new 800-page edition of Council's manual

National Safety Council
423-27 N. Michigan Ave., Chicago 11, Ill.

Safety in industry is the theme of 1951 edition of "Accident Prevention Manual for Industrial Operations", based on the premise that a major proportion of all accident causes are common to all industry. List price is $9 to members, $18 to non-members. The book covers plant layout, maintenance, boilers, pressure vessels, machine guards, metal-working machinery, material handling, electrical hazards, flammable liquids, fire prevention, protective clothing, industrial poisons, safety organization, accident records. One chapter lists safety organizations and publications.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 12714 If you write the maker

First Line of Defense

WECO No-Gall . . 30% pure metallic zinc base

WECO Steel-Aid . . 61% pure metallic lead base

WECO Hi-Speed Seal. Permanent, non-hardening, always ready for immediate use . . best defense against thread leaks in casing, tubing and other threaded connections.

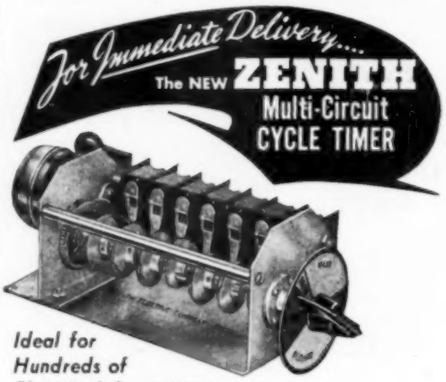
AGAINST GALLED THREADS

WECO No-Gall and WECO Steel-Aid establish an unbroken protective film between mating surfaces . . . a *metallic* film accepted by leading authorities as the best defense against galled threads in tool joints and drill collars.
Consisting of powdered metallic bases blended with neutral grease binders and tacky additives, these WECO Thread Compounds require no thinner, never harden, contain no compressible fillers and will not squeeze out under high torque.
When you buy thread compounds, specify "WECO" . . . no better thread protection is available.
SOLD THROUGH ALL LEADING SUPPLY STORES

WELL EQUIPMENT MFG. CORP.
Subsidiary of Chiksan Company
HOUSTON 1, TEXAS
Exclusive Sales Representative Outside Mid-Continent Area
CHIKSAN COMPANY
Bree Calif. New York 7
Export Sales: CHIKSAN EXPORT COMPANY Bree Calif. New York 7

WECO
Manufacturers and Distributors of Oilfield, Refining, Marine and Industrial Equipment

BREVITY—Identify by IEN - 12715 If you write the maker



Ideal for Hundreds of Electrical Operations

Specially designed to accurately time any operation — for electrical display signs, industrial furnaces, electrical appliances, laundry equipment and dry cleaning machinery. The Multi-Circuit Cycle Timer and other Zenith units will also solve many laboratory timing problems. May be set for on and off periods with as many circuits as desired . . . can be furnished without synchrouous motor for elevator control, limit switch and similar operations. Available now!

For information on volts, cycles and circuits as well as prices—send for illustration Bulletin No. 142.

ZENITH ELECTRIC CO.
146 W. WALTON ST., CHICAGO 10, ILLINOIS

BREVITY—Identify by IEN - 12716 If you write the maker

WHAT'S THE BEST WAY TO STRIP PAINT FROM METAL PARTS TOO LARGE TO BE SOAKED IN TANKS?

See Page 3

Oakite's New FREE Booklet on Paint Stripping

answers many questions that will lead you to better stripping procedures. You'll want to read more about:

What's the best way to strip large areas of structural metal where a steam supply is available? *See page 5.*

What is the best method when steam is not available? *See page 7.*

What is the cheapest way to strip metal parts in large volume? *See page 9.*

What are the best ways to prepare stripped surfaces for repainting? *See page 11.*

What strippers are best for removing oil-base paints? . . . Synthetic enamels, alkali-resistant plastics or resin-based paints? . . . Japans, wrinkle finishes, nitrocellulose lacquers, alkyds, phenolics and ureas? *See page 12.*

FREE For a copy of "How to STRIP PAINT" write to Oakite Products, Inc., 16A Thames St., New York 6, N. Y.

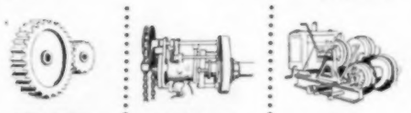
Machine cleaning	Tank cleaning
Electrocleaning	Pickling
Pre-paint treatment	Burnishing
Steam-gun cleaning	Rust prevention

Technical Service Representatives in Principal Cities of U. S. & Canada

OAKITE SPECIALIZED INDUSTRIAL CLEANING MATERIALS • METHODS • SERVICE

BREVITY—Identify by IEN - 12718 if you write the maker

Natural Graphite licks "EXTRA TOUGH" lubricating jobs!



OPEN GEARS rough treatment — SOOT BLOWERS high temperature — HOISTS dirt, shock loads

Yes—for all equipment exposed to dirt, dust, moisture, the weather, and other tough conditions.

You know how *ordinary* greases fall down badly on many really tough lubricating jobs. But pick out your toughest of tough lubricating jobs...outside, where there's rain, baking sun, dirt, dust. Try grease fortified with Dixon *Natural* Graphite—what a difference you'll see!

You get exceptionally effective lubrication from greases combined with Dixon Natural Graphite... *under the most adverse conditions.*

Dixon *Natural* Graphite is practically indestructible. Withstands temperature extremes and high pressures. Insoluble. Chemically Inert: unaffected by acids and alkalies.

What is your toughest lubricating problem? Tell us the full particulars ... our technical department will analyze your problem and send you specific recommendations and a sample of the proper Dixon lubricant. No obligation. Write, Joseph Dixon Crucible Co., Jersey City 3, N. J.

DIXON NATURAL GRAPHITE

D

BREVITY—Identify by IEN - 12719 if you write the maker

AMERICAN makes good STOCK gears
...conveniently available to you through good distributors

You'll find American STOCK Gears meet every requirement for high quality, accurate tooth contour, smooth, quiet performance and long life.

Complete line includes:
Spur Gears . . . Racks . . . Change Gears . . . Internal Gears . . . Miter Gears . . . Bevel Gears . . . Ratchets and Pawls . . . Spiral Gears . . . Worms and Worm Wheels.

Write us for name of distributor nearest you . . . Also request a free copy of Specification Catalog.

asg **AMERICAN STOCK GEAR** division
PERFECTION GEAR COMPANY • HARVEY, ILLINOIS

BREVITY—Identify by IEN - 12720 if you write the maker

YOUR "SPECIAL BUSHINGS" MAY BE OUR REGULAR STOCK ITEMS!

Ready for Immediate Delivery
TWO complete bushing standards, the A.S.A. Standard plus our own Acme Standard, provides a much wider selection, enabling you to obtain bushings from stock that often would require special manufacture. Results in faster delivery, lower cost. Write for catalog.

A curate I nterchangeable C ermetric

Acme Industrial Company
Makers of Hardened and Ground Precision Parts
215 N. Loftin St., Chicago 7, Illinois

BREVITY—Identify by IEN - 12721 if you write the maker

TESTING . . Electronic equipment for quantitative analysis of metals

Source: NORTH AMERICAN PHILIPS CO.
100 E. 42nd St., 4th Floor, New York 17, N. Y.

Does not destroy specimen

Quantitative and also qualitative analysis can be carried out on this improved design of the Norelco fluorescence analysis unit. It represents further development of the equipment previously described IEN-12540-47. The unit employs a wide-range vertical goniometer with a sweep radius of 170 mm. in place of the horizontal assembly used on the original design. It also employs a horizontal water-cooled oil-insulated X-ray tube operated from a standard water-cooled Norelco diffraction unit.

Output of the volume-sensitive Geiger counter is processed in electronic circuits to drive a recorder or a count register. The chart instrument is used for normal qualitative and quantitative analysis. The register is used where extreme quantitative precision is required.

Specimens under analysis are exposed to an intense beam of exciting X-radiation. This results in individual X-radiation being generated by elements susceptible to such excitation. The combined radiations representing the various constituents are passed through a special collimating lens assembly to a crystal which serves as an analyzer and which, by proper positioning, reflects each of the individual radiations at a specific angle. Intensities are measured by the Geiger counter. Data can be evaluated in per cent of the elements present.

BREVITY—Identify by IEN - 12722 if you write the maker

GRINDING . . Holder attachment manipulates cutters for sharpening

Source: TREYCO PRODUCTS
262-66 Hartford Ave., Buffalo 17, N. Y.

Model 500 is a new holder attachment for application in the company's Model-550 swivel vise which in turn applies on the work table of the tool-sharpening equipment previously described IEN-6780-49. This equipment, in addition to the table, employs a double-end wheel head for belt connection to a motor to take plain and cup wheels.

The holder is equipped with sleeves measuring $\frac{1}{16}$ to ½ in. in bore diameter to take the various sizes of tool shank. An index sleeve for a No. 2 Morse taper is available. The holder provides for feed and indexing and holds a cutter rigidly while it is being sharpened. List price for the attachment unit is about $30. The vise adds about $12.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 12733 if you write the maker

AJAX KNOWS COUPLINGS

• Ajax rubber-bushed Flexible Couplings have been recognized as the standard for 30 years.

They provide positive resilient drive. Available with rubber or Neoprene bushings to suit conditions. Wide range of sizes in standard, bolt-on, brake drum and other types, with flanges made of ferrous and non-ferrous metals.

Write for Bulletin 48.

AJAX FLEXIBLE COUPLING CO. INC.
WESTFIELD, N. Y.

BREVITY—Identify by IEN - 12724 if you write the maker

LEVEL THE LOAD with a TWIN DISC HYDRO-SHEAVE®

Do you know the simple and inexpensive way to solve starting load problems? By installing a Twin Disc HYDRO-SHEAVE on the output shaft of your electric motor. The motor can come up to maximum torque before picking up the load. Overloads merely cause the hydraulic fluid in the coupling to slip. The motor is protected. Another result is less demand current, sometimes even a smaller motor to do a bigger job. Level the load with a Twin Disc HYDRO-SHEAVE Drive and save money while you save machinery. Ask for Bulletin No. 145-B.

TWIN DISC HYDRO-SHEAVE DRIVES

TWIN DISC CLUTCH COMPANY, Racine, Wisconsin — Kenosha, Racine, Rockford, Illinois

BRANCHES: CLEVELAND • DALLAS • DETROIT • LOS ANGELES • NEWARK • NEW ORLEANS • SEATTLE • TULSA

BREVITY—Identify by IEN - 12725 if you write the maker

YOU CUT COSTS 4 WAYS with "QUIK-LIFT" hoists

1. **"Quik-Lifts" Cost You Less** per year to own because they are better built, last longer . . . save on both maintenance and replacement.
2. **Save You Money By Saving Time.** "Quik-Lifts" eliminate time and effort wasted by workers operating hand hoists—cut idle machine time, speed production.
3. **Protect You from Loss or Damage.** Shoe type brake cannot slip or drop load. Fool-proof switch stops hoist when load hook reaches upper or lower limit.
4. **Exact Model for Your Job** assures top operating efficiency. "Quik-Lifts" are available in 17 sizes, 500 to 4000 lb. — lifting speeds 4 to 49 ft. per min. — hook or lug suspension—with or without trolley.

• *Write for illustrated folder P12E giving complete information*

COFFING HOIST Company
Danville, Illinois

HOIST-JACKS, SAFETY-PULL RATCHET LEVER HOISTS, SPUR-GEARED HOISTS, "MIGHTY MIDGET" PULLERS, LOAD BINDERS, TROLLEYS

BREVITY—Identify by IEN - 12726 if you write the maker

with "UNDERWRITERS' APPROVED" PLS PIPE JOINT COMPOUND

Applying an inferior pipe dope to threaded connections is a waste of time and money. It costs no more to use the best—yet the proper compound can mean extra years of leakproof service for your equipment.

PLASTIC LEAD SEAL is insoluble in water, steam, ammonia, kerosene, gasoline, LP Gases and many other services. "PLS" never hardens—it allows joints to be easily broken years later.

Make your first application at our expense. Write today for a generous free sample

JOHN CRANE **CRANE PACKING COMPANY**
1801 CUYLER AVENUE • CHICAGO 13, ILL.

BREVITY—Identify by IEN - 12727 If you write the maker

WEIGH MATERIALS ON THE SPOT
SAVE UP TO 22% ON LABOR COSTS

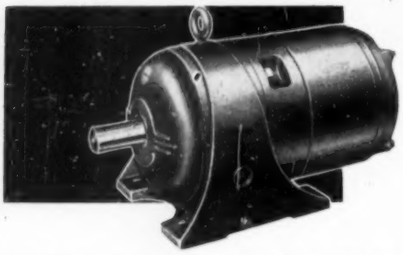
Compact
Low-Cost
DILLON
Weight Indicator

Picking materials up, moving them to a scale, setting them down and then picking them up again means double handling and greatly increased operational costs. With the DILLON Weight Indicator, loads are checked on the spot the instant they are lifted. Accuracy is guaranteed to be within ONE division or less at any point on the dial. Adjustable for large tare loads. 16" dia. dial. Swivel hook. Accidental overload and shock protected. 8 capacities from 0-250 pounds up to 0-20,000 pounds. Portable—weather-proof—dust-proof. Each unit checked with certified dead weights. Extreme utility at LOW cost!

Write today for illustrated, descriptive literature

W. C. DILLON & CO., INC.
1421-K S. CIRCLE AVENUE • FOREST PARK, ILL.

BREVITY—Identify by IEN - 12728 If you write the maker



FOOTE BROS.-LOUIS ALLIS
Gearmotors

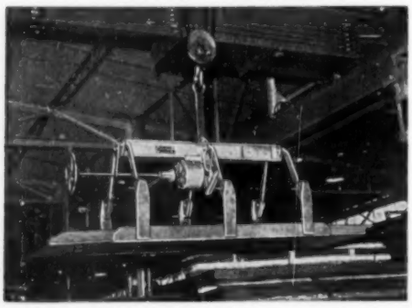
PROMPT DELIVERY! You can count on prompt delivery of Foote Bros.-Louis Allis Gearmotors—the finest Gearmotor obtainable. Superior in design and construction. Available in single, double, and triple reductions to provide output speeds from 780 down to 7.5 r.p.m. Capacities from 1 horsepower through 150 h.p. Available with open, drip-proof, splash-proof, enclosed and explosion-proof motors.

Write for Bulletin GMA

FOOTE BROS. GEAR AND MACHINE CORPORATION
Dept. IEN, 4545 S. Western Blvd. • Chicago 9, Illinois

FOOTE BROS.
Better Power Transmission Through Better Gears

BREVITY—Identify by IEN - 12729 If you write the maker



Save Time . . . Save Sheets

Handle loose or bundled sheets with one of these C-F Lifters and you save TIME and Sheets, because C-F Lifters, under one man end control, can handle more sheets per load safer, faster and more economically. Tong action grips load tightly, yet design features like wide bearing surface give full protection to stock edges. End control of C-F Lifters permits closer stacking piles—resulting in more efficient use of storage facilities. C-F Lifters are available in capacities from 2 to 60 tons or larger, in standard or semi-special designs.

WRITE FOR THE BULLETIN "C-F LIFTERS"

CULLEN-FRIESTEDT CO., CHICAGO 23, ILL.

CULLEN-FRIESTEDT CO., 1310 So. Kilbourn Ave., Chicago 23, Illinois

BREVITY—Identify by IEN - 12730 If you write the maker

PLATING . . Plastic stop offs mask part of work pieces to plate

Source: AMERICAN AGILE CORP.
5804-8 Hough Ave., Cleveland 3, Ohio

New application of the company's plastic spraying equipment, previously described IEN-2-50, is in coating selected areas of work pieces that are to be plated so these areas will be insulated and no plating will apply on them. At the same time the plastic coating itself can be stripped from the initially sprayed work and used again by positioning it on a new piece. One sprayed coating can be used a large number of times on a duplicate run of work.

The company is prepared to supply the flame-spraying equipment so a user can make his own masking pieces or will make the plastic masks themselves to apply on specified parts. The plastic is a non-porous chemically-inert polyethylene. It is built up to a little under ¼ in. in thickness on sample work pieces that have been coated with a special mold-release agent so the plastic will separate freely.

BREVITY—Identify by IEN - 12731 If you write the maker

TRUCK . . Wheel mounted rack, removable trays, folds flat to store

Source: COLEMAN-PETTERSEN CORP.
2121-25 St. Clair Ave., Cleveland 14, Ohio

To handle and store

Model 441 is a new welded tubular rack mounted on swivel-type ball-bearing casters with composition rubber wheels. The wheels can be locked against movement when the rack is spotted at a machine or a work station to receive or discharge. The work rides on removable trays measuring 24 by 31 inches, dimensions which suit the trays to ride also on standard rollers and belt conveyors.

Each rack takes 12 of the trays in two stacks of six rows 12 in. apart. Each tray has a load capacity of 70 pounds. The rack can handle a total of 1,500 pounds. The trays are available in wire, expanded metal, sheet metal to specification.

BREVITY—Identify by IEN - 12732 If you write the maker

RECORD KEEPING . . Useful information on how to keep records for the Controlled Materials Plan

Diebold, Incorporated
900 Mulberry Road S. E., Canton 2, Ohio

"C. M. P. Made Easy" titles new assembly of information on record keeping in relation to the Controlled Materials program. It includes a cover folder and two 6-page booklets. The first tells how to file applications for allotment of materials, reproducing the forms employed with little schematic steps. The second describes the three basic types of records.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 12733 If you write the maker

Bin Stuck Lately?

Don't ruin your Bins

Vibrate them with a TYPE F
CLEVELAND AIR VIBRATOR

• Steel Chips . . . Dry Colors . . . Concrete . . . Fertilizer . . . Sand . . . Coal . . . Soap . . . Sawdust . . . Vegetables . . . Chipped Ice . . . Meat . . . Candy . . . Wood Chips . . .

Or any other 'granulars' free up fast with a Type F Cleveland AIR Vibrator. Eliminate plugged or arched conditions. Write for Catalog No. 105 for complete details.

THE CLEVELAND VIBRATOR COMPANY

2737 Clinton Ave. • Cleveland 13, Ohio

BREVITY—Identify by IEN - 12734 If you write the maker

New! Low-Cost! Wide-Range!
VARIABLE Speed Sheaves
Easily Attached to Any Machine

1/15 TO 15 HP.
RATIOS UP TO 8:1

• Simple, sturdy Speed Selector Sheaves are applied to any machine in only a few minutes . . . giving you wide-range speed control at extremely low cost. You get wide speed variations with standard V-belts, since two variable pitch sheaves are used. Eliminates bulky sliding motor bases, movable jackshafts and wide, high-cost special V-belts.

• Standard V-belts • Automatic belt alignment
• Fixed shaft centers • LOW COST

Write **FOR FREE BULLETIN**

SPEED SELECTOR INC.
118-A Noble Court • Cleveland 13, Ohio

BREVITY—Identify by IEN - 12735 If you write the maker

ZERO BACKLASH for LIFE
independent of extreme precision
DUNCAN & BAYLEY, INC.
POSITION SERVO ACTUATORS

Zero backlash is achieved in Duncan & Bayley Position Servo Actuators by virtue of design rather than high cost fabrication. No springs, no close tolerances on gear centers, no split gears are employed. Reduced shock loading eliminates excessive tooth wear. In addition, Duncan & Bayley Position Servo Actuators incorporate these PLUS advantages.

- Function independent of ambient temperature beyond most airborne requirements.
- Eliminates motor armature inertia; effective torque to inertia ratio improvement 20:1. Torque is independent of speed.
- Torque repeatable for equal conditions within ±1% independent of speed.
- Improved amplification factor, output 80 watts for 40 MA (3 watt) control.
- Continuous heat dissipation 40% of maximum rating.
- Life consistent with typical industrial machinery.

Applications for Duncan & Bayley Position Servo Actuators
Radar antennae transmissions
Autopilots
Computer Drives
Valve Servos
Tension Controls

MANUFACTURED BY

DUNCAN & BAYLEY
DIVISION OF GENERAL RIVETERS, INC
785 Hertel Avenue,
Buffalo 7, N. Y.

BREVITY—Identify by IEN - 12736 If you write the maker

FREE! Stainless Fastening Selector

Handy slide-chart makes your job simpler, saves valuable time! Instantly identifies A-N Nos. pertaining to stainless steel nuts, screws, bolts, rivets, cotter pins, washers; gives sizes, other data. Write for your FREE copy of Chart 51K TODAY!

Anti-Corrosive
Metal Products Co., Inc
Manufacturers of STAINLESS STEEL FASTENINGS
CASTLETON-ON-HUDSON, NEW YORK

▼ BREVITY—Identify by IEN - 12737 If you write the maker ▼

Remove Dusty and Humid Air with Peerless-Electric INDUSTRIAL EXHAUST FANS

● Peerless Electric PVB exhaust fans are widely used in factories, warehouses, foundries, etc., and may also be installed in ducts where low static pressure resistance is encountered. Because of complete ball bearing construction, the fans may be mounted in either vertical or horizontal positions.

FIVE FAN SIZES

The fans are made in 24", 30", 36", 42" and 48" diameters. Self-aligning ball-bearing pillow blocks provide rigid support. Bearings are pre-lubricated and equipped with labyrinth steel seals to retain the lubricant and to exclude dust and moisture.

MOTORS

The motors range from ¼ to 1½ H. P., single-phase Capacitor-Induction and three-phase Induction types, are equipped with ball bearings and are totally enclosed, rigid mounted, and operate at 1750 RPM on 60-cycle current. Motors with other characteristics also available.

AUTOMATIC WALL SHUTTERS

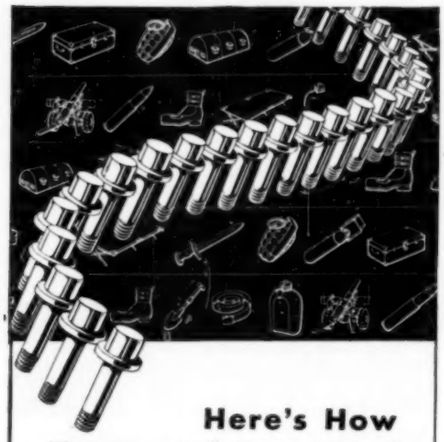
Automatic wall shutters of same sizes as fan diameters also are available.

Write for complete specifications on Peerless Electric PVB Industrial Exhaust Fans and Automatic Wall Shutters.

THE PEERLESS ELECTRIC COMPANY
Established 1893 • WARREN, OHIO

Peerless-Electric MOTORS·FANS·BLOWERS

▼ BREVITY—Identify by IEN - 12738 If you write the maker ▼



Here's How Townsend Cuts Steel Use and Reduces Cost On This Defense Item

The part shown above for use in a smokeless powder box was originally made from bar stock which scrapped hundreds of tons of critical steel. Townsend engineers suggested that by a slight change in design the part could be cold headed from wire thus saving considerable steel and reducing the cost greatly. We are not permitted to reveal the number of parts made, but the aggregate savings both in money and steel was substantial.

Townsend products for defense range from hob nails for field boots to rivets for half tracks — from special nails for gliders to artillery firing pins — even balls for canisters.

To learn more about the savings in time, money and critical materials that are possible when you have Townsend design and produce your small parts and fasteners, write or phone today.

Townsend
COMPANY • ESTABLISHED 1816
Plants: New Brighton, Pa. / Chicago 38, Ill.
Cherry Rivet Company Division, Los Angeles, California
Sales Offices in Principal Cities

▼ BREVITY—Identify by IEN - 12740 If you write the maker ▼

TESTING . . Electronic trigger releases single sweep on oscilloscope

Source: STERLING INSTRUMENTS CO.
13329-33 Linwood Ave., Detroit 6, Mich.

Remote or local reset

Type 121 Single Sweep Accessory is a new electronic triggering instrument for application with an oscilloscope to release only one pulse that will trigger a single sweep on the oscilloscope at the start of any complex wave pattern. The instrument provides a single negative output pulse to trigger the single sweep from either a positive or negative input signal with strength of 0.1 volt.

Input can be obtained from the signal itself or from an external transducer or a photoelectric cell. Principal application is in photographing a single trace on an oscilloscope without interference from succeeding traces. The instrument will also trigger from a single non-recurrent pulse when the time of the occurrence is not known. Operation is on 110-volt 50 or 60-cycle ac. in standard design.

▼ BREVITY—Identify by IEN - 12741 If you write the maker ▼

TUMBLING . . Paste concentrate for work finishing in a tumbling barrel

Source: BLUE MAGIC SPECIALTIES CO.
2137 Margaret St., Philadelphia 24, Pa.

Ask for Bulletin 1

Work pieces made of brass, bronze, copper, gold, silver can be finished to a pleasing luster in a tumbling barrel by addition of about 4 oz. of the company's new compound for the finishing run. This quantity is based upon using high water level in a 32 by 30-in. barrel. From 1 to 2 oz. can be employed as a cutting compound in connection with deburring in the same barrel with water at a low level. Blue Magic No. 1 is the designation.

▼ BREVITY—Identify by IEN - 12742 If you write the maker ▼

TRANSFORMER . . For circuits to mercury vapor lamps, 110 or 220 volts

Source: JEFFERSON ELECTRIC CO.
825 25th Ave., Bellwood, Ill.

For steady action

New assemblies for indoor and outdoor installation to supply current to Type H-1 mercury vapor lamps is now available in the company's line of transformers. The new units operate on 110 and 220-volt circuits. Each has several primary-voltage taps to permit close matching to the line voltage. The outdoor unit includes aerial, pole-top, pole-base and vault designs for boundary lighting, building-exterior lighting and for lighting in parking and shipping areas.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 12743 If you write the maker ▼

EARLE GEARS ARE BUILT TO GIVE

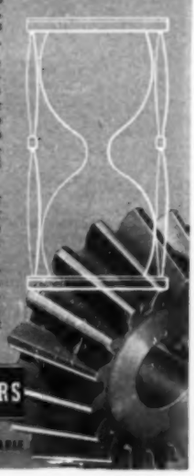
LONG SERVICE

You can expect—and get—long trouble-free service and smooth, quiet operation from Earle Gears and Earle Operating Machinery.

Because Earle Gears are cut to extremely close tolerances to insure constant, uniform transmission of power through proper distribution of the load across the entire gear face. And, every Earle Gear is cut exactly to your specifications from whatever material best fits the application.

So, if you need gears, send us your drawings and specifications for quotation. You'll get immediate attention and prompt delivery.

THE EARLE GEAR & MACHINE CO., 4707 Stenton Ave., Philadelphia 44, Pa. Sales Offices: 149 Broadway, New York 6; 901 Davis Ave., Pittsburgh 12, Pa.; 7738 Market St., Youngstown, Ohio.



EARLE GEARS

It's good business to do business with EARLE

▼ BREVITY—Identify by IEN - 12744 If you write the maker ▼

If you're drilling and cutting concrete and masonry then SYNTRON DEPENDABLE ELECTRIC HAMMERS can save you

Money and Time!

3600 powerful blows per minute save minutes and hours of valuable manpower by drilling, cutting, chipping, scaling and a score of other jobs many times faster than they can be done by hand.

Save money by providing the means for that valuable manpower to do more with less fatigue.

Syntron Electric Hammers bring Production Speed to these maintenance and installation jobs.

Write for illustrated folder

SYNTRON CO.
410 Lexington Ave. Homer City, Pa.

▼ BREVITY—Identify by IEN - 12745 If you write the maker ▼

The solution to many design improvement problems lies hidden in parts moving too fast to see.

Stanley Works engineers had just such a problem with an electric plane—and found the answer with the aid of the Kodak High Speed Camera. When the motion was seen slowed down as much as 200 times, required design changes were readily apparent—changes which resulted in tremendously improved operation.

You can study countless problems of high speed mechanical motion and fluid flow with this single, complete unit. Taking up to 5200 pictures a second, it puts the visual facts you need on 16mm film for study whenever you wish. A new attachment permits simultaneous recording of oscillograph traces and physical action, if electrical aspects are important.

See for yourself how others have used this instrument to stretch a second of time to three minutes. Just send for your copy of the booklet, "Magnifying Time." Write to Eastman Kodak Company, Industrial Photographic Division, Rochester 4, N. Y.

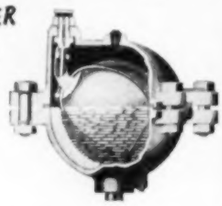
the Kodak HIGH SPEED Camera

Kodak

BREVITY—Identify by IEN - 12747 if you write the maker

GET RID OF AIR ACCUMULATIONS IN PIPE LINES...

A BIG TROUBLE SAVER THAT COSTS YOU LITTLE!



When air lodges at high spots in pipe lines, it reduces the effective area of the pipe, creates a friction head, lowers pumping capacity, and may result in serious water hammer!

Simplex Air Release Valves bring you a sure, efficient cure for these difficulties . . . venting air *automatically* before it can cause damage. And you pay for a standard valve—

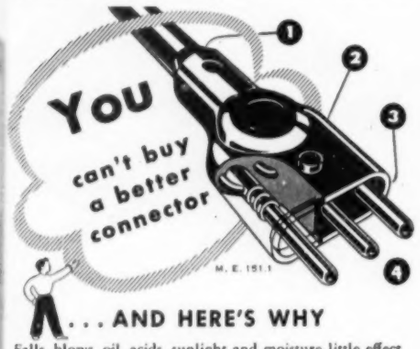
The Simplex Air Valve is easily installed . . . positive in action . . . ample in capacity. Standard valves for pressures up to 250 p.s.i. . . . special valves for pressures up to 800 p.s.i. Thousands have been in successful use for over 30 years.

Write for free bulletin to Simplex Valve & Meter Co., Dept. 12, 6717 Upland Street, Philadelphia 42, Pa.

IT'S SIMPLEX IT'S ACCURATE

SIMPLEX
VALVE AND METER COMPANY

BREVITY—Identify by IEN - 12748 if you write the maker



. . . AND HERE'S WHY

Falls, blows, oil, acids, sunlight and moisture little effect the life or performance of JOY electric plugs or receptacles. Molded as one-piece Neoprene units they can't crack or shatter and won't become "out-of-round". Before you buy, it will pay you to learn why these and other worthwhile features have made them an outstanding choice of American industry.

1. Sturdy one-piece cable-connector assembly.
2. Safe, long lasting resilient Neoprene jacket.
3. Water-Seal prevents moisture infiltration.
4. Contacts firmly embedded in connector body.

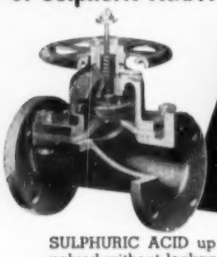
Consult a JOY Engineer or write for your free copy of Bulletin MC108 on the JOY electric connector family today.

100 YEARS OF ENGINEERING LEADERSHIP—1851-1951

JOY MANUFACTURING COMPANY
HENRY W. OLIVER BUILDING, PITTSBURGH 22, PENNSYLVANIA
IN CANADA: JOY MANUFACTURING COMPANY (CANADA) LIMITED, GALT, ONTARIO

BREVITY—Identify by IEN - 12749 if you write the maker

Here is the valve that revolutionized flow control of Sulphuric Acid...



HILLS-McCANNA *Saunders Patent* DIAPHRAGM VALVE *with* L-1 PLASTIC DIAPHRAGM

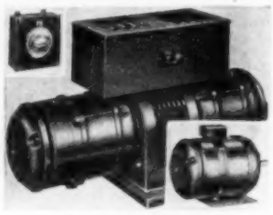
SULPHURIC ACID up to 66° Bé can now be valved without leakage, dripping or sticking—with this proved Hills-McCanna development. Available in sizes ¼" thru 4"; handwheel operated, lever operated or in sliding stem models. Suitable for pressures up to 100 psi, temperatures up to 125° F. Write for full information. HILLS-McCANNA CO., 2347 W. Nelson St., Chicago 18, Ill.

HILLS-McCANNA CO.
saunders patent
diaphragm valves
Also manufacturers of — Proportioning Pumps
Force-Feed Lubricators • Magnesium Alloy Castings

BREVITY—Identify by IEN - 12750 if you write the maker

DRIVE . . Motor generator set, dc. motor, adjustable speed control

Source: BALDOR ELECTRIC CO.
4353-65 Duncan Ave., St. Louis 10, Mo.



$260 to $490

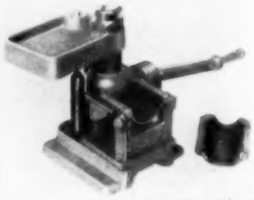
Sixteen speeds between 0 and 2,400 rpm. are provided in both forward and reverse by this new assembly of motor-generator set, a dc. motor, a 32-step control rheostat to regulate the dc. motor speed and a full-wave rectifier, of the Tungar type, to supply required excitation. A vernier rheostat can be connected into the circuit for finer adjustment than the 150-rpm. steps in the standard assembly.

Capacities range from ¾ to 1½ hp. in single-phase 220-volt 60-cycle ac. input. Range is from ¾ to 3 hp. for single-phase 220 or 440-volt 60-cycle ac. A feature of the control is its application of dynamic braking for the dc. motor when the control is moved in decelerating direction or placed at zero, when the motor is running in either direction.

BREVITY—Identify by IEN - 12751 if you write the maker

DRILLING . . Clamping fixture swings bushing plate to clear the work

Source: A. H. BOWLZER MFG. CO.
10133 San Vincente Ave., South Gate, Calif.



The bushing plate mounted on the column of this new Auto-Swing-Jig operates in a combination of vertical and rotating movements when the lever is moved. In release direction it rises and swings clear of the work. In clamping position it returns to correct location above the work and moves downward to hold and correctly locate the drill bushing.

Work area on the base measures 4½ or 6½ in. in width by 2⅞ or 3¾ in. front to back in front of the support column. Height range between the base and the bottom of the drill plate, in clamped position, is 3¾ to 3 9/16 inches.

BREVITY—Identify by IEN - 12752 if you write the maker

STORING . . Technical article reprint on how large aluminum tanks were welded on the job

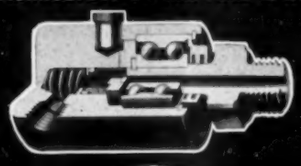
Chicago Bridge & Iron Co.
330-34 S. Michigan Ave., Chicago 4, Ill.

Author of "Field Welding of Aluminum Tanks" is Perry C. Arnold, welding engineer for the company. His article in the technical literature now has been reprinted and is offered as an 8-page folder. Pictures and text describe erection and welding methods for 30,000 and 200,000-gal. aluminum tanks.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 12753 if you write the maker

FAWICK ROTORSEAL PROVIDES TROUBLE-FREE TRANSMISSION OF AIR AND LIQUIDS



If your machine problem requires the transmission of air or liquids from stationary to rotating machine members, a FAWICK ROTORSEAL will provide the trouble-free, practical answer.

Precision-made ROTORSEALS are available in either single or multiple passage units, producing an absolute sealing of air, liquids, or gases under pressure. They are equally effective in vacuum applications. Thousands of installations have proved the high efficiency of FAWICK ROTORSEALS.

FAWICK AIRFLEX CO., INC.
9919 CLINTON ROAD • CLEVELAND 11, OHIO

For complete information on a FAWICK ROTORSEAL to suit your specific application, write to the Home Office, Cleveland, Ohio.

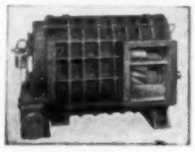
FAWICK Airflex
INDUSTRIAL CLUTCHES AND BRAKES

BREVITY—Identify by IEN - 12754 if you write the maker

The **STANDARDAIRE BLOWER**
Precision Built
AXIAL FLOW–POSITIVE DISPLACEMENT

Investigate important operating FEATURES

- HIGH EFFICIENCY
- LOW NOISE LEVEL
- ADIABATIC COMPRESSION
- HIGH SPEED and COMPACTNESS
- RELIABILITY
- ADAPTABILITY
- CLEAN AIR DELIVERY
- DIRECT DRIVE



Write for Publication No. 90

READ STANDARD CARPORATION
Dept. E24, 370 Lexington Ave., NEW YORK 17, N. Y.
BLOWER-STOKER DIVISION

FORMERLY The Standard Stoker Co., Inc. — ONLY THE NAME IS CHANGED
READ STANDARD CORPORATION

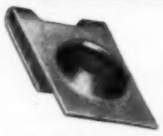
NEW YORK • CHICAGO • ERIE • YORK • LOS ANGELES

BREVITY—Identify by IEN - 12755 if you write the maker

It might be **NEWS** TO YOU

Only PRESTOLE builds ALL

SHEET METAL NUTS With a 360° Grip



"J" NUT

"J" Nuts—to fit all metal from .020 to .090 thick. Sizes from 6-32 to 5/16 machine and sheet metal screws. Made in all finishes. Same availability on "U" Nuts as "J". All with the conical dome formed with a full 360° locking grip around screw.

HEX-LOX

Hex-Lox—the Hex nut with both the 360° conical thread grip and the side-arm thread grip. Weighs 70% less than conventional lock nuts. Has highest installation torque, prevailing torque, and back off torque. Excells in vibration tests and tensile strength. Made in 5 screw sizes from 6-32 to 1/4-20. SAE-1060 steel .016 to .020 thickness.

CAGE NUT

One-Piece Cage Nuts — combines both nut and cage in one piece. No prongs. Full 360° unbreakable thread grip. Saves material, cuts parts in half, saves handling and assembly time. Made of SAE-1060 steel in all popular sizes.

PUSH ON

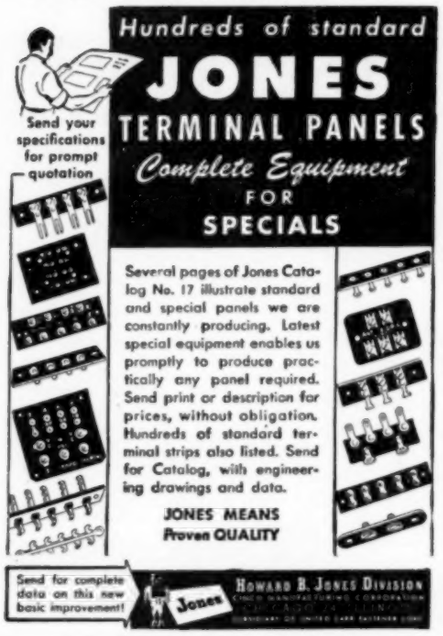
Push-Ons—for smooth studs. The PRESTOLE push-on clover leaf nut has also become very popular because of its 4 point spring tension bite on smoothest studs, whether metal, fibre or plastic. All sizes and finishes.

The growing demand for more PRESTOLE fasteners is due largely to its unique, precision engineered conical grip that bites a full 360° into the root of the screw thread. Preferred because of their greater holding power. Hundreds of millions in use on automobiles, trucks, refrigerators, stoves, heaters, radio, TV and scores of other products. In writing for samples, kindly send blueprints or details of application.

Over 1,000 Shapes and Sizes

FAMOUS FASTENERS
PRESTOLE CORPORATION
1325 MIAMI ST. • TOLEDO 5, OHIO

BREVITY—Identify by IEN - 12757 If you write the maker



BREVITY—Identify by IEN - 12758 If you write the maker

need LOW temperatures in your production or testing?

Murphy & Miller cabinets will meet your requirements

FEATURES:

- ★ Completely Sealed Refrigeration Units
- ★ Welded Tube Assemblies — No Maintenance Problems
- ★ Ranges to —140° F. . Most Advanced Designs Available

If your production requires low temperatures for any reason—in any range, there's a Murphy & Miller Chest or Cabinet to meet your needs. Extra features such as controlled heating and humidity available in any cabinet or chest. Capacities from 1 cu. ft. and up, in standard or special models to your order.

Write for bulletins and specification data today.

MURPHY & MILLER, Inc.
1324 SOUTH MICHIGAN • CHICAGO 5, ILLINOIS

BREVITY—Identify by IEN - 12759 If you write the maker

REMEMBER . . . this is the show for presidents, vice presidents, general managers, plant managers, plant engineers, maintenance engineers—and all other plant operating men whose responsibility it is to select, install, operate, and maintain the plant equipment and services that mean low-cost operation and high production.

SO . . . circle Jan. 14-17 today on your 1952 calendar . . . write right now for rooms at your favorite Philadelphia hotel (for yourself and key people in your organization) . . . and mail this coupon

CLAPP & POLIAK, Show Management "14"
341 Madison Ave., New York 17, N. Y.

Please send me _____ tickets for the Plant Maintenance Show.

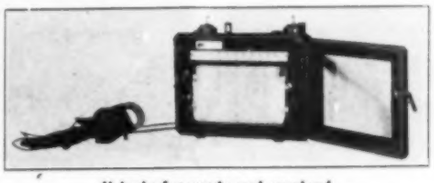
FREE

NAME _____ TITLE _____
COMPANY _____ ADDRESS _____
CITY _____ ZONE _____ STATE _____

BREVITY—Identify by IEN - 12760 If you write the maker

METER . . Clamp-on ammeter and recorder to check plant circuits

Source: WESTON ELECTRICAL INSTRUMENT CORP.
641 Frelinghuysen Ave., Newark 5, N. J.



It looks for waste and overload

Records can be taken on the use of current at various times during the day and at desired points in a plant by this new combination of Weston Model-633 clamp-on ammeter and TAG recording ammeter. The new equipment is available from the company's Tagliabue Instruments Division to measure and record ac. without breaking the circuit.

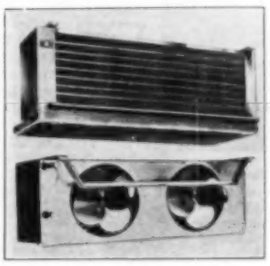
The Weston meter applies on either insulated or bare conductors. Current is induced in a winding in the magnetic circuit of the clamping jaw. This current is rectified by a network within the housing to supply dc. to the recording ammeter. Application is on conductors to 2 in. in diameter.

Terminals and a range-selector switch replace the regular indicating dial on the meter housing for connection to the recorder. The clamping jaws are insulated to withstand a break-down test of 5,000-volt ac. Accuracy is within 3 per cent in frequencies between 50 and 70 cycles.

BREVITY—Identify by IEN - 12761 If you write the maker

REFRIGERATING . . Unit cooler to provide temperatures below freezing

Source: YORK CORP.
777 Roosevelt Ave., York, Pa.



Seven models are available in a new line of unit coolers employing ammonia as a refrigerant. Seven similar models use Freon. Capacities range from 275 to 35,600 btu. per hour. Application can be made singly or in multiple to satisfy given requirements. Each unit consists of a coil, fan and fan motor with housing, drip pan, drain, spray headers for water defrosting and hanger channels. A typical unit is shown in the illustration in two-fan assembly. The driving motor is a sleeve-bearing single-speed enclosed design for operation on 110-volt single-phase ac.

Smallest unit in the line mounts one 1/10-hp. motor, provides 340 cfm. of air with a 10-in. fan. It measures about 22 in. in width, 20 in. in depth and 16 in. in height. Largest unit is equipped with two fans driven by 1/6-hp. motors to handle 2,200 cfm. of air. This unit measures about 49 by 28 by 24 inches. Typical applications are in frozen-food storages, fur storages, meat-packing plants.

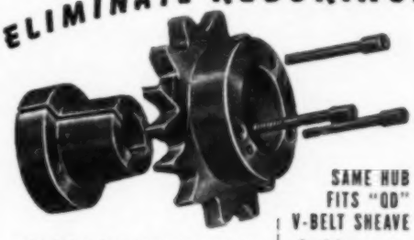
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 12762 If you write the maker

FORT WORTH QD Roller Chain SPROCKETS WITH TAPERED SPLIT HUB

PATENT APPLIED FOR

ELIMINATE REBORING!



SAME HUB FITS "QD" V-BELT SHEAVE

Speed changes are simplified and "spare" sprockets can be carried more easily.

If your favorite distributor doesn't stock this new item, tell him about it. He'll reward you with better service.

"OFF THE SHELF" SERVICE AVAILABLE FROM INDUSTRIAL DISTRIBUTORS

Reboring of stock bore sprockets to fit various shafts is eliminated due to the various bores available in the QD hub. Installation and removal from the shaft is made easy by the tapered fit of the hub and sprocket. Hub assembly grips the shaft equivalent to a "press fit."

Catalog explaining additional advantages and construction details will be furnished on request.

OTHER FORT WORTH PRODUCTS
V-BELT DRIVES
SCREW CONVEYORS and ACCESSORIES
SCREW ELEVATORS
INDUSTRIAL FANS

FORT WORTH STEEL AND MACHINERY CO
3600 McCART, DEPT. 212, FORT WORTH, TEXAS

BREVITY—Identify by IEN - 12763 If you write the maker

BREVITY—Identify by IEN - 12764 If you write the maker

"HAYNES STELLITE" Trade-Mark

GUIDE ROLLS

Resist Abrasion . . . Thermal and Mechanical Shock

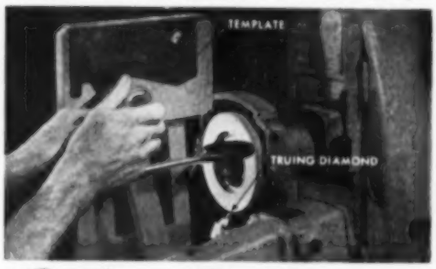
Because HAYNES STELLITE guide rolls have no temper to lose when handling hot steel, they have excellent strength and wear resistance in service. The guides also have good resistance to thermal and mechanical shock.

Loose particles of steel will not adhere to guides made of HAYNES STELLITE alloy. They are extremely resistant to oxidation at high temperatures, have a low frictional coefficient, and will take and keep a high polish.

For further information about HAYNES STELLITE alloy guides for handling bars, rods, and wire, write to our General Offices in Kokomo, Indiana.

Haynes Stellite Company
A Division of Union Carbide and Carbon Corporation
UCC
General Office and Works: Kokomo, Indiana
"Haynes Stellite" is a trade-mark of Union Carbide and Carbon Corporation.

BREVITY—Identify by IEN - 12765 If you write the maker



So this is "Diaforming"

Simple — isn't it? — this modern, fast method of forming and re-forming contours of grinding wheels by hand-following the contours of inexpensive templates with a tracer point. DIAFORM is a fast, accurate, portable Attachment. Just mount it on chuck of your Toolroom Surface Grinder, and it's all set to do a precision job whenever you need it — to an accuracy of .0005" in a matter of minutes. Write for detailed information.

BRANCH OFFICES:
Birmingham — Boston — Chicago — Cincinnati — Cleveland — Dallas (The Stance Co.) — Detroit — Houston (The Stance Co.) — Los Angeles — New York — Philadelphia — Pittsburgh — Rochester — St. Louis — San Francisco — Export Dept., West Hartford Conn.

PRATT & WHITNEY
Division Niles-Bement-Pond Company
West Hartford 1, Connecticut, U.S.A.
Dedicated to Accuracy for 81 years

▼ BREVITY—Identify by IEN - 12766 If you write the maker ▲▼

What bulk materials do you handle?

• Dry silica sand is handled in the Neff & Fry Storage Bin pictured here. The bin is 24' dia. x 50' high. It holds 1,180 tons of sand—enough to load quite a string of freight cars.

You'll be rather astonished to see the list of nearly 90 kinds of flowable bulk materials stored in N. & F. Bins. The list is given in our interesting folder, "Bins With the Strength of Pillars."

The folder also contains a list of prominent users—many of the best known companies in the United States. You can be sure that the purchase of N. & F. Bins by these companies was preceded by careful investigation and comparison.

If you are concerned with the handling of flowable bulk materials, ask for a copy of the folder. Do it now while the subject is on your mind.

Not exported except to Canada and Mexico

THE NEFF & FRY CO. • 114 Elm St. Camden, Ohio

SUPER-CONCRETE STAVE STORAGE BINS ◆ NEFF & FRY

▼ BREVITY—Identify by IEN - 12767 If you write the maker ▲▼

new metallizing gun cuts machine repair costs 85%-90%

Salvaging worn feed roll journal for textile mill

40% faster than older models; produces uniform coatings with minimum operator attention.

The new METCO Type 4E Gun makes metallizing easier to use and a bigger money-saver in industrial maintenance than ever before. With the older types of metallizing guns, constant operator attention was required to maintain oxygen and gas pressures within a close range to obtain uniform coatings. Now, with this new gun, gas pressures are automatically balanced against all normal variations. So little operator attention or skill is required that the gun almost runs itself.

In addition to this advantage, the METCO 4E Gun sprays up to 40% faster than older models. Wire feed is controlled automatically for any wire size from 20 B&S gauge to ⅛ inch, in any metal. Add to these advantages, the recent development of the new metallizing material, Sprabond Wire, which bonds itself to smooth steel surfaces without any mechanical preparation except cleaning. It serves as the perfect preparation coating for spraying with any other finished metal.

repair costs run as low as 10% of replacement cost

Metallizing gets worn parts like these back in service faster and at lower cost than any other method of repair:

Air Compressor Parts	Patterns
Armature Shafts	Pistons
Axle Shafts	Piston Rods
Camshafts	Plungers
Crankshafts	Pump Packing Sleeves
Cylinder Liners	Pump Plungers
Fan Shafts	Roll Journals
Hydraulic Rams	Rolls
Impellers	Spindles
Journals	Squeeze Rolls
Lathe Beds	Turbine Shafts

The following names are the properts of Metallizing Engineering Co., Inc.: METCO*, SPRABOND WIRE. *Reg. U. S. Pat. Off.

METALLIZING ENGINEERING CO., INC.
38-13 30th STREET LONG ISLAND CITY 1, N. Y.
In Great Britain: METALLIZING EQUIPMENT COMPANY, LTD. Chobham Lane, Woking, England

R. J. McWaters Metallizing Engineering Co., Inc.
38-13 30th Street, Long Island City 1, New York

☐ Please send me more information about the new Type 4E Metallizing Gun.

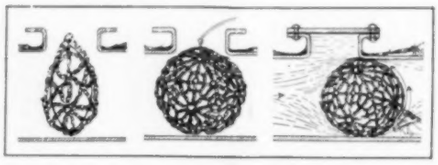
☐ Please arrange a demonstration in our shop.

NAME _____
COMPANY _____
STREET _____
CITY _____ ZONE _____ STATE _____

▼ BREVITY—Identify by IEN - 12769 If you write the maker ▲▼

CLEANING . . Chain enclosed ball rolls by line pressure through a pipe

Source: ROTARY PIPE CRAWLERS
P. O. Box 187-A, Corona, Calif.



Usefully it rolls along

New design of the company's rotary pipe crawler, previously described IEN-13/025, has been developed particularly to clean large gas mains. Eight of the new units are at work in a 20-in. main where gas pressure propels them along at 20 to 30 mph.

The hollow neoprene ball is encased in an alloy-steel chain employing alloy-steel connecting rings and capable of standing up under the sharp action to which the ball is exposed as it rolls through the line. Introduction can be made through an 8-in. Tee. The ball is inflated after it is in the main line.

The company is prepared to supply the ball and the chain assembly in sizes ranging from 1½ to 60 in. in diameter. The 20-in. unit lists at about $112.

▼ BREVITY—Identify by IEN - 12770 If you write the maker ▲▼

TRUCK . . Four wheel hand unit made of aluminum, rates ½ ton

Source: TOBEY MFG. CORP.
1219-23 El Segundo Blvd., El Segundo, Calif.

Couplings are included

Flexi-Truck Model 130 is a new 4 by 8-ft. platform truck for operation alone or for service as a trailer. It weighs about 450 lb. and is equipped with hinged aluminum gates on the two sides. Mounting is on aluminum wheels equipped with permanently-greased and sealed Timken bearings, thread guards and neoprene tires. The truck can be towed at speeds to 30 mph. over rough ground when service requires.

▼ BREVITY—Identify by IEN - 12771 If you write the maker ▲▼

TESTING . . Booklet defines terms used in acoustic work such as bels, mels, sones

American Standards Association
70 E. 45th St., Room 2845, New York 17, N. Y.

1951 edition of Standard Z24.1, "Acoustical Terminology", has been revised considerably over the previous 1942 edition, particularly in the section dealing with hearing and speech. The 52-page booklet, list price $1.50, defines terms used in sound transmission and propagation, ultrasonics, music, recording, shock and vibration, underwater sound.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 12772 If you write the maker ▲▼

Direct-Current AMPLIFIER

For accurately measuring very small direct-current voltages and currents this amplifier is finding considerable application in industry. It has high stability of calibration, high gain and simplicity of operation. It is a-c operated and gives full-scale output over an input range of 0.1 to 1.0 volt. A considerable number of input resistances between 100 ohms and 10 megohms can be selected by a switch.

The Type 715-A D-C Amplifier was designed to be operated with an Esterline-Angus 5-milliampere recorder for use as a d-c recording milliammeter or voltmeter. Type 715-AM (illustrated) is supplied in a walnut cabinet at $320.00. Write for complete information.

GENERAL RADIO Company 275 Massachusetts Ave. Cambridge 39, Mass.
90 West St. NEW YORK 6 920 South Michigan Ave. CHICAGO 5
1000 North Seward St. LOS ANGELES 38

▼ BREVITY—Identify by IEN - 12773 If you write the maker ▲▼

Let The ARIDIFIER

CLEAN YOUR AIR AND GAS LINES

Removes 92% Oil, Water and Dirt

The Aridifier gives you positive removal of oil, moisture and other foreign matter from air or gas lines. With paints and lacquers it often eliminates bloom and imperfections in finish. It provides dry lines for ceramics, sand blasting, for air cleaning, etc. Wherever the need exists for dry clean air or gas, the Aridifier delivers the goods. Easily installed. No maintenance problem. 10 models available. Capacity range: As low as 7 CFM to 17,000 CFM.

BULLETIN 147 Tells The Complete Story

HOW IT WORKS Exploded view shows how four multi blade rotors revolve at high speed in opposite directions under impact of air movement through non-aligned rotor spaces. Moisture, dirt and other foreign matter which collect on rotor blades are thrown out of air stream by centrifugal force to side of housing, and pass into drain.

Made By The Manufacturers of Logan Lathes and Shapers.

Logan ENGINEERING CO.
4902 LAWRENCE AVE. CHICAGO 30, ILL.

▼ BREVITY—Identify by IEN - 12774 If you write the maker ▲▼

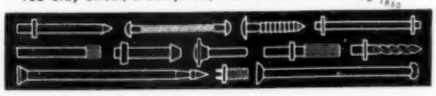
SPECIFY Hassall specially engineered fasteners

Hassall cold-headed fasteners can improve your products and save you money, even on short runs. Send us your specifications for your nails, rivets and screws... in diameters from 1/32" to 3/8"... lengths to 7"... in any workable metal . . . in practically any finish.

◆ Your inquiry will be handled promptly. Ask for free catalog.

JOHN HASSALL, INC.
132 Clay Street, Brooklyn 22, New York

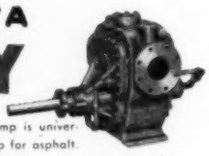
Hassall ESTABLISHED 1850



▼ BREVITY—Identify by IEN - 12775 If you write the maker ▲▼

Stuck for a way to pump asphalt?

GET A KINNEY



Kinney SD Rotating Plunger Pump is universally accepted as the ideal pump for asphalt.

IT'S SIMPLE — there are no valves, blades, springs, or gaskets. Clear passages promote flow of viscous liquids. IT'S RUGGED — shafts, bearings, plungers are heavy-built for heavy service. IT'S EFFICIENT — this pump works with meter-like volumetric efficiency. For processing or distributing asphalt products, the endurance and dependability of SD Pumps are unbeatable. There's a Kinney SD Rotating Plunger Pump for every asphalt handling job . . . in capacities from 2 GPM to 3000 GPM. Furnished plain or steam-jacketed to suit the job requirements.

Send for Bulletin LS1.

Kinney LIQUID PUMPS

KINNEY MANUFACTURING CO.
3564 Washington Street, Boston 30, Mass.
NEW YORK, CHICAGO, CLEVELAND, HOUSTON, NEW ORLEANS, PHILADELPHIA, LOS ANGELES, SAN FRANCISCO, SEATTLE, FOREIGN COUNTRIES.

BREVITY—Identify by IEN - 12776 If you write the maker

CONSISTENTLY ACCURATE AT ANY RANGE!

BS&B CLIMAX LIQUID LEVEL CONTROL

TYPE 888

Whether liquid level range is ¼" or 120", BS&B's new Climax Type 888 Liquid Level Controls give consistently accurate automatic control. New CONE PIVOT suspension point is friction free—self compensating for minor misalignment, non-sticking and non-climbing. Torque tube stronger, heavier, rigidly centered by friction-free ball bearing.

EASIER SERVICING

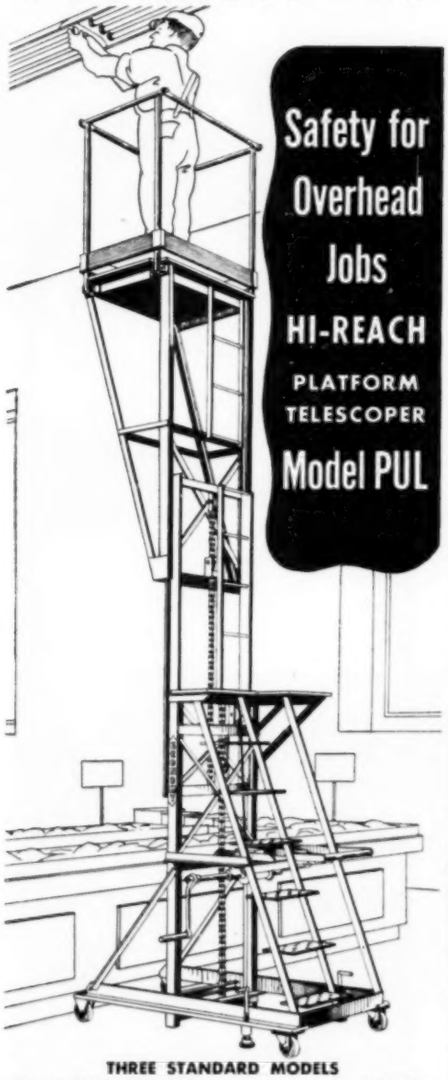
Torque tube is removable and reversible without dismantling controller housing. Type 888 available with vertical, horizontal or combination connections.

CLIMAX BS&B CONTROLS

Write for New Climax Catalog 103

BLACK, SIVALLS & BRYSON, INC.
Climax Controls Division, Dept. 62-L
7500 East 12th Street Kansas City 3, Missouri

BREVITY—Identify by IEN - 12777 If you write the maker



THREE STANDARD MODELS

No. 1—Platform lift 10'9"		$305.00
No. 2—Platform lift 11'9"		315.00
No. 3—Platform lift 15'0"		340.00

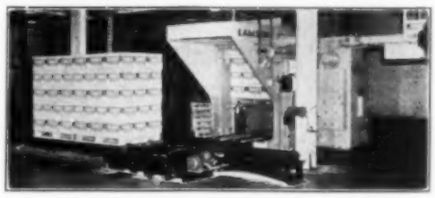
Equipped with 5" diameter base wheels
Rubber-tired wheels $8.00 extra
F.O.B. Chicago
Other models with platform lift up to 95'
Write for complete specifications.

ECONOMY ENGINEERING COMPANY
4502 West Lake Street • Chicago 24, Illinois

BREVITY—Identify by IEN - 12779 If you write the maker

HANDLING . . Stacking machine loads cartons or cases on pallets

Source: LAMSON CORP.
303-5 Lamson St., Syracuse 1, N. Y.



Note loaded pallet to left

New assembly of the company's Pallet Loader, previously described IEN-6873-51, now provides for intermediate storage of loaded pallets so six of the units can be accumulated while waiting for a truck to return from a stacking area. The new arrangement makes it unnecessary to stop the loading operation if the truck being employed for removal does not return within a given time. Loaded pallets are pushed from the discharge conveyor to a second conveyor at right angles with it when a tripping mechanism is operated.

The machine takes pallets measuring 36 or 40 in. in width in two available sizes. Cartons or cases are conveyed to the top of the assembly where they are positioned and pushed onto the pallet on an elevator. As each layer is completed the elevator moves down one increment so the next layer can be pushed into place until the pallet is at the bottom of the elevator travel and completely loaded. Empty pallets, stored in a magazine in the machine, are presented one at a time just prior to the elevator moving back to its top position to start a fresh loading cycle.

BREVITY—Identify by IEN - 12780 If you write the maker

CONTROL . . Electric servo motor for remote positioning applications

Source: FORD INSTRUMENT CO.
31-12 Thomson Ave., IEN 3, Long Island City 1, N. Y.

For very sensitive duty

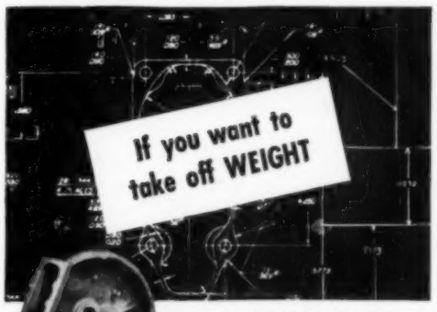
The company announces production of a new line of low-inertia servo motors with high-voltage control windings to eliminate need for transformers in the circuit. The motors are available in ½, 1½, 5 and 10-watt sizes with close-coupled windings for feed back. The design is particularly suited for extremely sensitive requirements in which the load must be continuously in correspondence with a rapidly fluctuating signal.

A typical installation control consists primarily of a differential device and the servo motor. The device transmits a signal to the motor representing the magnitude and direction of the "error" or difference between the input and the load. The motor then drives the load to an exact position, either static or dynamic, corresponding to the input.

Brochure, 24 pages, "Ford Control Motors", presents technical data, information on characteristics, types available and control-motor specifications.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 12781 If you want to take off WEIGHT



a WELL-CAST lightweight magnesium or aluminum casting is your ready answer

40 Years' experience producing quality lightweight castings for the aircraft, textile, pneumatic tool, automotive, domestic appliance, and other diversified industries everywhere.

Well-Made Wood and Metal Patterns
Ampco Bronze Castings

THE WELLMAN BRONZE & ALUMINUM CO.
2510 EAST 93rd STREET • CLEVELAND, OHIO

BREVITY—Identify by IEN - 12782 If you write the maker

Important Facts about VERSATOL* GEOPRENE

Power and Control Cable in this FREE BOOKLET

Here, in a big new booklet, you'll find interesting and useful information about G-E Versatol-Geoprene general-purpose cable. This booklet, with selection data and suggested applications, will come in handy when you need any of the following types of cable:—

Power Cable • Lighting Cable • Control Cable

for installations in raceways, for direct burial in the ground, or in open air.

This nonmetallic rubber-type cable has GR-S (Buna-S) insulation and a neoprene-compound jacket. It is resistant to moisture, heat, aging, sunlight, oils, soil acids and alkalies, abrasion, and flame. It is economical to install, has excellent electrical characteristics, and lasts a long time.

To get your copy of this 12-page booklet, without charge, write Section W62-1242, Construction Materials Division, General Electric Company, Bridgeport 2, Conn.

*Registered Trade-mark of General Electric Company

GENERAL ELECTRIC

BREVITY—Identify by IEN - 12783 If you write the maker

Let this all-purpose DEWALT *save money in Your plant*

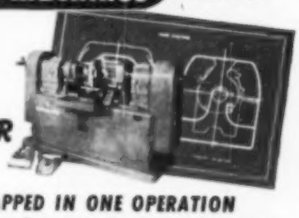
Here is the ideal, all-purpose machine you need to cut costs and step up production in your plant. DeWalt is *many* machines in one! It dadoes, routs, shapes, tenons, grinds, sands, etc.! It's fast, accurate, safe, dependable. It takes up little floor space—and streamlines all your cutting operations. Write for catalog. DeWalt, Inc., Dept. IE-12, Fountain Ave., Lancaster, Penna.

DEWALT INC.
A subsidiary of American Machine and Foundry Co.

BREVITY—Identify by IEN - 12784 If you write the maker

CLEVELAND tapping machines lead screw

300 PIECES PER HOUR



BOTH SIDES TAPPED IN ONE OPERATION

For a leading appliance manufacturer Cleveland engineers designed a Cleveland Tapping Machine to tap four 10-24 and one 6-32 holes in the top face of the main casting and five 10-24 and two 8-32 holes in the bottom face . . . both sides simultaneously all with lead screw controlled spindles to assure complete accuracy. On needed civilian and on defense jobs Cleveland Tappers are reducing production costs and saving priceless man hours. With a Cleveland Tapper engineered to the job, a semi-skilled worker becomes a skilled operator.

CHECK WITH CLEVELAND FIRST if you need to perform any or all of these operations: Tapping . . Threading . . Drilling . . Spot-facing . . Reaming . . Chamfering. Cleveland engineers can help you with your problem, show you how to effect economies in these operations.

Mr. Lead Screw says . . . Write for your copy of the Cleveland Production Tapping Guide and a copy of Catalog T-9.

THE CLEVELAND TAPPING MACHINE CO.
A Subsidiary of AUTOMATIC STEEL PRODUCTS, INC.
CANTON 6, OHIO

▼ BREVITY—Identify by IEN - 12785 If you write the maker ▼

REEVES BROTHERS, Inc., 54 Worth Street, New York 13, N. Y.

▼ BREVITY—Identify by IEN - 12786 If you write the maker ▼

MORE POWER to YOU

with *Hydraulic* REMOTE CONTROL

Sperry

SINGLE TUBE BALANCED SYSTEMS

Ideally suited for feed, valve, throttle, governor, variable speed and clutch controls in all industries. F Series rated capacity 400" lbs. pressure stroke with 125" lbs. return stroke. Working stroke 60". H Series rated capacity 50" lbs. pressure stroke with 13" lbs. return stroke. Intermediate transmitters available for multi-station control.

EASY TO INSTALL

Single copper tube permits neat, compact installations. Maintenance is simple. No compensators—no pressure accumulators.

EASY TO OPERATE

Adaptable and versatile for single and multi-purpose control. Mounts convenient to operator.

ACCURATE — DEPENDABLE

Accurate within ½ of 1 degree. Several hundred thousand cycles can be attained without interruption for service maintenance.

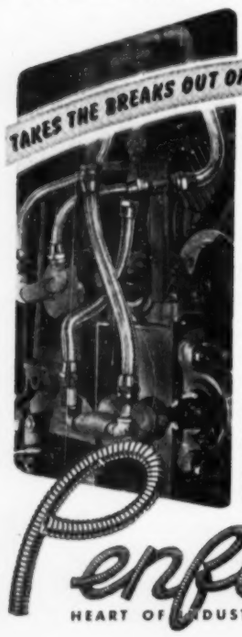
LITERATURE ON REQUEST

SPERRY Products, Inc.

Danbury, Connecticut

ALSO MANUFACTURERS OF METAL TESTING & MEASURING INSTRUMENTS • SELF-SEALING COUPLINGS ALLIED INDUSTRIAL PRODUCTS

▼ BREVITY—Identify by IEN - 12787 If you write the maker ▼



PENFLEX FLEXIBLE TUBING CURES BREAKS IN VIBRATING STEAM LINES

Rigid piping crystallized under the high frequency movement of rollers on paper machine . . . broke and caused shutdowns.

The answer was one-half inch and three-quarter inch diameter braided Penflexweld. This corrugated, all-metal welded tubing serves the double purpose of giving flexibility and developing super-resistance against bursting, crushing or breaking. Non-burnable Penflexweld affords complete protection against high temperatures. Vibrating motion is isolated at its source.

Penflex engineers can help you solve flexible tubing application problems. Penflex manufactures a complete line of four-wall interlocked tubing from ⅛" I.D. and up. Write for booklet on "Flexineering."

PENNSYLVANIA FLEXIBLE METALLIC TUBING CO., INC. 7200 Powers Lane Phila 42, Pa.
Branch Sales Offices Boston • New York Chicago • Houston • Cleveland • Los Angeles

HEART OF INDUSTRY'S LIFE LINES

▼ BREVITY—Identify by IEN - 12788 If you write the maker ▼

HANDLING . . Self-equalizing sling rides wire rope on brake sheave

Source: CALDWELL CO.
1828-32 Camp Ave., Rockford, Ill.

Turns free on no load

New design of Adjust-A-Leg sling, previously described IEN-2728-48, employs a wire rope with load hooks at its two ends and a sheave mounted on a spring-supported shaft in a steel housing. The housing carries an eye to apply on a crane hook. Beneath the sheave in the housing are two brake shoes.

The sheave pulls down into contact when a load is imposed. This contact prevents sheave rotation so the sling is held against movement in the position it assumed when sheave and brake contact was established.

Eight sizes in the line range from ¾ to 15 ton with a factor of safety of 5 at a 45-deg. angle. About two-thirds of the rated load can be held on one leg of the sling with one-third on the other without danger of slipping.

▼ BREVITY—Identify by IEN - 12789 If you write the maker ▼

HEATING . . Electric cabinet stores low-hydrogen welding electrodes

Source: FRED C. ARCHER INC.
601-N W. Wisconsin Ave., Milwaukee 3, Wis.

Lists at $225

Coated electrodes employed in low-hydrogen welding are stored in this new Blueweld Stabilizer after they have been removed from their moisture-proof shipping containers and prior to their use in the arc-welding operation. The cabinet is electrically heated and is ventilated so the electrode coating cannot absorb excess moisture. The cabinet will take 400 lb. of electrodes. It is made of welded steel with fibre-glass insulation. It operates on 110/220-volt input. Size is 19 by 24 by 26 inches. Weight is 118 pounds.

▼ BREVITY—Identify by IEN - 12790 If you write the maker ▼

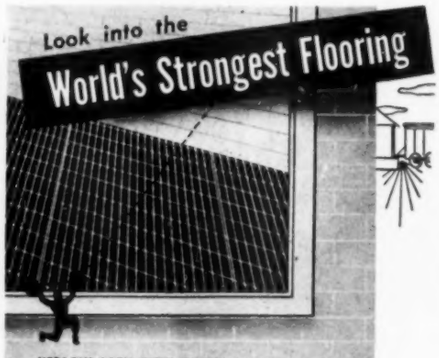
HEAT TREATING . . Hardening ability of quenching materials described in technical booklet

University of Illinois
1303 W. Green, Urbana, Ill.

Bulletin 389 of the University's Engineering Experiment Station describes the performance of brines, water, oils, air, and ethylene glycol in the hardening of steel. Title is "An Evaluation of the Hardening Power of Quenching Media for Steel". List price is $1.50 for the 132-page booklet. Tests and their results are given by illustrated text and graphs.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 12791 If you write the maker ▼



KERLOW OPEN STEEL GRATING will outlast the building in which it is installed. It's safer, cleaner, fireproof.

Engineering and installation tests prove that it has no peer in FLOORS • SLABS • ARMORING • DRAIN GATES • TRENCH COVERS • SAFETY STEPS. Famous for bridges and with all processing industries where durable, self-ventilating, chemical-resistant flooring is essential.

Write for complete catalog and assistance from specialist-engineers who can solve your steel-flooring problems.

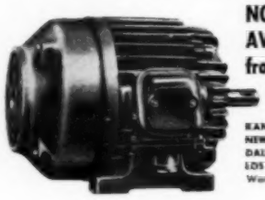
KERLOW

KERLOW STEEL FLOORING CO.
23 Mallory Ave., Jersey City, N. J.

▼ BREVITY—Identify by IEN - 12792 If you write the maker ▼

ACEC

Integral Horsepower Electric Motors ¾-200 hp.



NOW AVAILABLE from STOCK in NEW YORK CHICAGO KANSAS CITY NEW ORLEANS DALLAS and LOS ANGELES Warehouses

Strictly conform to NEMA FRAMES AND SPECIFICATIONS. On hand now, 1-phase and 3-phase: Open Drip Proof Motors, Totally Enclosed Fan Cooled Motors, 4 types of Pump Motors, and Adjustable Speed Schrage Motors. All ACEC motors fully guaranteed. Service available from 232 distributors and service shops. Write, wire, or telephone your requirements.

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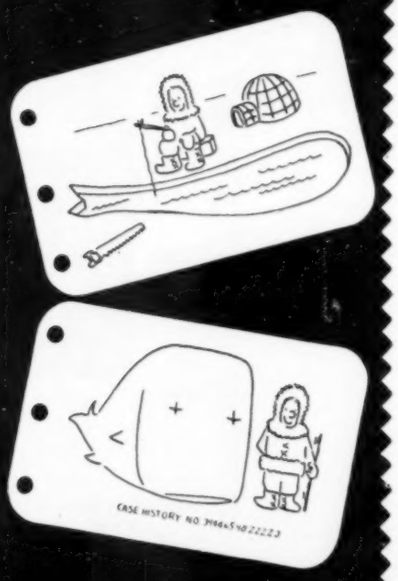
Sole Representatives of
ATELIERS de CONSTRUCTIONS ELECTRIQUES de CHARLEROI
Branches and Representatives in Principal Cities

▼ BREVITY—Identify by IEN - 12793 If you write the maker ▼

INGENUITY

can solve any problem



if YOUR PROBLEM

involves the higher production of threaded parts

HY-PRO TAPS

can help you to a solution

HY-PRO TOOL CO.
NEW BEDFORD, MASS. U. S. A.
Subsidiary of Continental Screw Co.

Order from your distributor or call the HY-PRO SALES ENGINEER

▼ BREVITY—Identify by IEN - 12795 If you write the maker ◄▼

AERO-SEAL WORM-DRIVE HOSE CLAMPS

WON'T SHAKE LOOSE!

Wherever you have to clamp a hose connection tight . . . or wherever you want to lock two objects of any shape together in an unshakeable bond . . . your best bet is AERO-SEAL.

Threads of steel worm engage deep into slots in stainless steel band — hold tight under extreme vibration in automotive, aircraft and industrial applications. CAN'T SHAKE LOOSE.

One-Hand Installation

Install an Aero-Seal any place you can reach with thumb and one finger. Self-feeding when band engages worm threads. Thumb-grip and screwdriver types.

Re-use Again and Again

When hose is worn you RE-USE the same Aero-Seal again and again. RE-USE Aero-Seals on temporary clamping jobs—they conform to any shape without damaging band.

ALL AERO-SEALS HAVE STAINLESS STEEL BANDS

"Aero-Seal" WORM DRIVE HOSE CLAMPS

ANOTHER BREEZE MARK PRODUCT

BREEZE CORPORATIONS, INC.
41 South Sixth St. Newark, N. J.

▼ BREVITY—Identify by IEN - 12796 If you write the maker ◄▼

No Special Wiring...

WITH

IBM

ELECTRONIC TIME CONTROL

ELECTRONIC—*no special clock or signal wiring.* Time systems operate and are supervised by electronics over regular AC circuits.

ECONOMICAL—low installation cost. Time units can be relocated without special clock or signal wiring.

EFFICIENT—automatic coordination of clocks, recorders, and signals to the second. Uniform time is assured in all units.

Write for information today

INTERNATIONAL BUSINESS MACHINES CORPORATION
590 Madison Avenue, New York 22, N. Y.

▼ BREVITY—Identify by IEN - 12797 If you write the maker ◄▼

FOTO-FLO* MODEL C
PHOTO-COPYING MACHINE
New! Speedier! More Economical!

DAYLIGHT OPERATION NO DARKROOM REQUIRED

Makes up to 5 (18" x 24") Prints a Minute of anything written, printed, drawn or photographed

WRITE DEPT. 51-61

for information showing how FOTO-FLO can speed production and lower photo-copying costs.

*Reg. U. S. Pat. Off.

HALOID THE HALOID COMPANY
ROCHESTER 3, NEW YORK
Branch Offices in Principal Cities
Photocopy Papers • Photo-copying Machines • Photographic Papers

▼ BREVITY—Identify by IEN - 12798 If you write the maker ◄▼

FIRST AID . . Mobile hospital with emergency stretchers and tables

Source: EMERGENCY AIDS CO.
3442-46 N. Clark St., Chicago 13, Ill.

Can service considerable area

New equipment for emergency use measures 10 by 6½ by 5½ feet. It is built on a steel frame, weighs about 1,900 lb. and is balanced for road travel through debris and rough terrain. The assembly includes two folding operating tables, nine oxygen outlets, two Collapsi-Cot emergency stretchers, an engine-driven lighting generator, a 60-gal. water-storage tank, an electric water heater, a built-in sink, storage battery for the starting generator, electric-light outlets and switch-over equipment for the dual oxygen-tank supply. There is also storage capacity for medical supplies, cots and blankets.

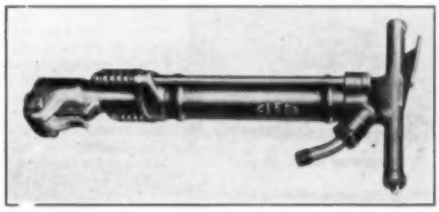
The unit can be towed by a station wagon to a disaster scene where it is unhitched and the station wagon becomes an emergency ambulance to bring in patients and take them away from the operating table.

The Collapsi-Cot stretcher is available also as an individual unit for use in a plant without the mobile equipment. It folds to measure 45 by 20 by 2¼ inches. It can be carried by two men or operated by one individual with wheels riding the ground at one end. A patient can be carried prone or seated.

▼ BREVITY—Identify by IEN - 12799 If you write the maker ◄▼

CONSTRUCTION . . Paving breaker also drives spikes and sheet piling

Source: CLECO DIVISION
5123-27 Clinton Drive, Houston 20, Texas



Type RC-50 is new lightweight design of pneumatic paving breaker. The tool weighs 50 lb., takes a 1⅛-in. hexagon shank 6 in. in length. It measures 27 in. in overall length and is available with optional front head for conversion to a spike driver or a sheet-piling driver. The head can be rotated so the throttle handle is parallel or at right angles in pile driving. The company's Reed-Cleco valve provides control on both power and return stroke for hard uniform blows, fast action and minimum recoil.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 12800 If you write the maker ◄▼

Stop CORROSION in your Steam System WITH CORAVOL

When fed to your steam system, **CORAVOL**: (1) *prevents* corrosion in steam and condensate lines, (2) *cleans out* clogging rust deposits resulting from previous corrosion. Thus, **CORAVOL** protects lines, increases the effectiveness of heat transfer surfaces, restores original capacity of lines and the operating efficiency of valves and traps.

CORAVOL is part of a complete technical service which provides special chemical formulas for: Boiler Feed Water . . . Foam Prevention . . . Hot Water Supply . . . Refrigerating Brine . . . Cooling and Condenser Water . . . Rapid Scale Removal . . . Coagulation . . . Algae Control.

Write TODAY to Western Chemical Company, 715 Washington Street, Kansas City, Missouri—for complete FREE data about the **CORAVOL** process.

Western Chemical Co. is owner of U. S. Patent No. 2652024 covering the use of volatile amines in steam systems.

WESTERN CHEMICAL CO.
715 WASHINGTON KANSAS CITY, MO.

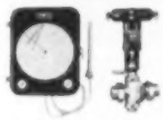
▼ BREVITY—Identify by IEN - 12801 If you write the maker ◄▼

SWIFT & CO. guards PARD quality with POWERS

Temperature Recording Regulators on Cooking Retorts

One of the important steps insuring PARD'S uniformly high nutrient content, taste, color and odor is accurate control of cooking operations with POWERS instruments. This is only one of many processes in Swift & Co. plants regulated by POWERS control.

Next time you require automatic temperature or humidity control for any process, heating or air conditioning system try POWERS. (a59)



Powers Recording Regulator and FLOWRITE Valve

THE POWERS REGULATOR CO.
3437 Oakton St., Skokie, Ill.

60 Years of Temperature and Humidity Control • Offices in Over 50 Cities

▼ BREVITY—Identify by IEN - 12802 If you write the maker ◄▼

Kester Solder

Kester engineers, with over 100,000 different types and sizes of solder available, will specify the right flux-core solder for the job.

Easier to Use

Using the most suitable solder for each operation will enable solderers to work at top speed without sacrificing quality. No rejects.

Top Quality

Only the finest grades of tin and lead commercially available used Fluxes — chemically correct.

KESTER SOLDER COMPANY
4201 Wrightwood Ave., Chicago 39
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KESTER SOLDER

SEND FOR FREE MANUAL, "SOLDER and Soldering Technique"

▼ BREVITY—Identify by IEN - 12803 If you write the maker ◄▼

Over 85% of the torque wrenches used in industry are

STURTEVANT TORQUE WRENCHES

Read by Sight, Sound or Feel

- Permanently Accurate
- Practically Indestructible
- Faster—Easier to use
- Automatic Release
- All Capacities

in inch ounces
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(All sizes from 0-6000 ft. lbs.)

Every manufacturer, design and production man should have this valuable data. Sent upon request.

P.A. STURTEVANT CO.
ADDISON QUALITY ILLINOIS

BREVITY—Identify by IEN - 12804 If you write the maker

B&W KAOCAST

Last 3 to 6 times longer

Used for burner blocks, B&W Kaocast stayed on the job 3 to 6 times as long as previous refractory...and this 3000F refractory castable is still going strong.

Kaocast is versatile, too...eliminates need for inventory of special shapes. It can be molded quickly by you, when you need it, directly in place or applied by cement gun. Put B&W Kaocast to work in your plant. Get all the facts from your B&W Refractories Engineer.

THE BABCOCK & WILCOX CO.
Refractories Division
85 LIBERTY ST., NEW YORK 6, N. Y.
WORKS: AUGUSTA, GEORGIA

B-417

BREVITY—Identify by IEN - 12805 If you write the maker

That's why Architects, Heating Contractors and Engineers are specifying Vulcan — the fin-tube radiation that's as easy to install as a length of pipe. Available in desired lengths, threaded or chamfered for immediate installation in schools, hospitals, churches, public buildings and residential units. Light in weight, it requires few fittings and supports. Made from seamless steel pressure tube, A.S.T.M. Spec. A-83, or copper water tube. Fins *guaranteed* to remain tight under conventional operating conditions.

Illustrated Bulletins on Request

THE VULCAN RADIATOR CO.
26 FRANCIS AVE., HARTFORD 6, CONN.
REPRESENTATIVES IN PRINCIPAL CITIES

BREVITY—Identify by IEN - 12806 If you write the maker

For processing
For heating
For power

IRON FIREMAN STOKERS will cut firing costs

COAL-FLOW MODEL
No coal handling—coal flows directly from bunker to fire
Automatically fires economical stoker coal with complete reliability. Modulated fuel and air supply follows load automatically. No wasteful lag or runover. Feeds coal directly from bunker or bin—eliminates costly manual coal handling. Outstanding fuel economy. Unusually flexible to meet varying requirements.

Capacities up to 400 boiler horsepower

Capacities up to 1,000 boiler h.p. and more

PNEUMATIC SPREADER MODEL
Pipes coal direct to fire
Completely eliminates manual coal handling. Efficiently burns all grades of bituminous economy coals, including low ash fusion, sub-bituminous and lignite—ranging from ¼" to 2" top size. Thoroughly dries and preheats coal. This complete combustion system is readily adapted to any boiler room layout (even with bunkers on other floor levels).

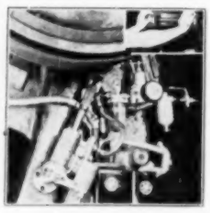
Write for full information and specification charts

IRON FIREMAN
3176 WEST 106TH STREET • CLEVELAND 11, OHIO

BREVITY—Identify by IEN - 12807 If you write the maker

PRESS ATTACHMENT . . Clutch operator keeps worker's hands from danger zone

Source: TECH-N-KAL MACHINE & ENGINEERING
12923-27 Auburn Ave., Dept. 60, Detroit 23, Mich.



Fail safe design

Pneumatic cylinder with spring return and an integral three-way valve and operating solenoid are available to pivot mount on the side of a press employing a dog-operated clutch. The new unit takes the place of the trip rod for normal manual press operation. It connects through an air-line lubricator that is supplied as standard equipment. A circuit runs from the solenoid to two push buttons on the front of the press. The assembly is completed with a cam and limit switch on the press crankshaft at the brake side. This switch connects into the electric circuit also.

An operator must use both hands to depress the two buttons in order to actuate the solenoid, admit air to the cylinder and trip the clutch. Immediately upon starting, the cam operates the limit switch and opens the circuit independent of the operator so the press will stop after one revolution.

Model AE-60 is the designation. List price for a complete unit is $208.70. A foot button attachment to replace the two operating buttons on the press adds $32.50.

BREVITY—Identify by IEN - 12808 If you write the maker

CLEANING . . Engine driven sweeper for floors, 20 and 28 in. widths

Source: PARKER SWEEPER CO.
89-93 Bechtle Ave., Springfield, Ohio

Operator walks at rear

List prices are $275 and $315 for two new engine-driven floor-sweeping machines that have been added by the company to its hand-operated machine, previously described IEN-1954-48. Drive is by a 1-hp. 4-cycle gasoline engine mounted at the rear and connected by V-belt. Mounting is on semi-pneumatic tires. The shafts ride on ball or roller bearings.

The cylindrical brush in the main machine housing sweeps dirt and trash into a hopper secured by the housing. The hopper can be lifted out to dump the accumulated materials. Three types of brushes are available for various duties. A wall brush can be added with belt connection to the machine. It increases sweeping width by 6 inches. It is shown at the lower right.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

FIND WHAT YOU WANT?
All products and services are listed on page 118

BREVITY—Identify by IEN - 12809 If you write the maker

TOUREK

BALL JOINTS • PIPE PLUGS AND QUALITY SCREW MACHINE PRODUCTS

Tourek's quality Ball Joints meet exacting requirements. Simplified design, improved performance, and lower costs result from specifying Tourek Ball Joints . . . the only recognized standard. Large stocks assure prompt delivery.

Tourek's precision countersunk steel pipe plugs are accurate, high strength, and economical—resulting in the highest quality at costs which are competitive to old style plugs.

Stock sizes, available with National Pipe or Dry-Seal threads are: ⅛", ¼", ⅜", ½" and 1". Also available on special order in alloy steels, aluminum or brass in sizes up to 2¾" diameter.

Modern high speed single and 6-spindle automatics—together with complete secondary equipment, including grinding and honing—plus 50 years' experience, assure you "The Best in Quality Screw Machine Products."

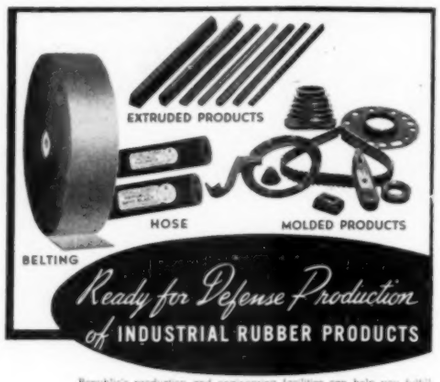
Your requirements, up to 2¾", are made with utmost precision, and with prompt-est delivery assurance.

LITERATURE
Comprehensive data on any or all Tourek products sent promptly upon request—write for yours now. J. J. TOUREK MFG. CO. 4701 W. 16th St., Chicago 50, Ill.

TOUREK
"THE BEST IN QUALITY SCREW MACHINE PRODUCTS"

ESTABLISHED IN 1920

BREVITY—Identify by IEN - 12810 If you write the maker



Republic's production and engineering facilities can help you fulfill defense contracts faster. . . . For 50 years we've specialized in the field of industrial rubber, making all types of:

- MOLDED RUBBER PRODUCTS
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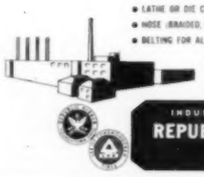
- LATHE OR DIE CUT SPECIALTIES
- HOSE (BRAIDED, WRAPPED, METAL REINFORCED)
- BELTING FOR ALL PURPOSES



Write, phone or wire us today about your requirements. Engineering consultations are also available to help you develop bids. Address: Republic Rubber Division, Youngstown, Ohio. Phone 3-2131.

INDUSTRIAL RUBBER PRODUCTS BY
REPUBLIC RUBBER DIVISION
Lee Rubber & Tire Corporation
YOUNGSTOWN, OHIO

BREVITY—Identify by IEN - 12811 If you write the maker

ELIMINATE EXHAUST FUMES!

Use OCM Catalytic Exhausts on Your Gasoline Powered Fork Lift Trucks

Make your industrial trucks safe to operate.

With the OCM exhaust, gasoline powered fork lift trucks may be operated safely inside factories, in cold storage areas and food processing plants, in low-ceilinged, badly ventilated warehouses, and for box-car and shipside loading and unloading operations.

The OCM exhaust replaces the standard muffler on any industrial truck.

Write for more facts today

LONG LIFE . . . FULLY TESTED . . . GUARANTEED PERFORMANCE

OXY-CATALYST MFG. CO. INC.
113 CONESTOGA RD., WAYNE, PA.

BREVITY—Identify by IEN - 12812 If you write the maker

NOW! SKYLIGHT WITH RESOLITE

TRANSLUCENT STRUCTURAL PANELS

RESOLITE makes large skylight and wallight areas economical for corrugated industrial buildings because no extra framing is required either for support or weatherproofing — it nests with any standard corrugated sheet. RESOLITE permits substantial savings in plant lighting by its efficient diffusion of daylight through the building interior. Structurally rugged, chemically immune to weather extremes and most industrial fumes, RESOLITE gives long life without protective treatment. RESOLITE is molded in six colors to all standard sheet sizes and corrugations. Made of polyester resins reinforced with Fiberglas mat, the material is shatter-proof and can be worked with ordinary tools. **Excellent for Interior Partitioning** in office or home, for shower and toilet stalls, and decorative architectural uses.

Write for free literature

RESOLITE CORPORATION
ZELIENOPLE, PA.

▼ BREVITY—Identify by IEN - 12813 If you write the maker ▼

now with 12 position indexing

12 position indexing now makes possible the alignment with work at any thirty degree increment.

This is only one of the outstanding features developed by the first and largest manufacturer of turrets for small lathes. Other features include built-in cut-off tool and holder and positive rapid indexing. All wearing parts are hardened and precision fit. They are available in three sizes.

Switch to Crozier Tool Post Turrets today. Save as much as 75% set-up and down time in lathe operations. In Crozier, you have America's precision-built tool post turret. Write for catalog.

CROZIER MACHINE TOOL CO. Dept. IEN-12

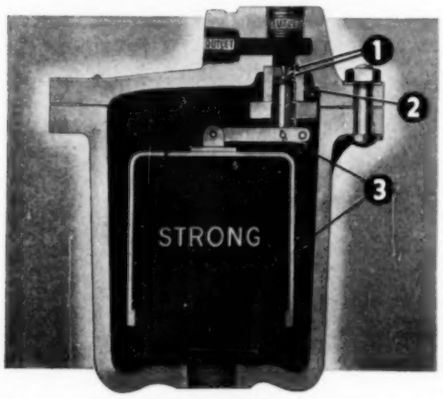
Hawthorne, California

▼ BREVITY—Identify by IEN - 12814 If you write the maker ▼

3 Reasons

STRONG* Traps

are easy to maintain!



Look for these three STRONG low-maintenance features in the STRONG 80 Series Inverted Bucket Trap:

1. **Anum-Metl Valve and Seat—guaranteed leakproof for one year;**
2. **Bolted-in seat design—insures tight seal, easy servicing;**
3. **Stainless steel bucket and trim.**

Compare these features with other traps!

STRONG 80 Series Trap sizes ½" to 2½", pressures to 250 lbs., temperature to 500° F. (forged steel for higher pressures).

Dual outlet simplifies piping, bottom inlet keeps trap cleaner. Years of trouble-free operation assured by super-STRONG construction.

Catalog No. 68-I describes inverted, open bucket and other types of STRONG traps. Write today.

*Trade Mark Reg. U. S. Pat. Off.

STRONG, CARLISLE & HAMMOND COMPANY

1392 West 3rd Street
Cleveland 13, Ohio

ANUM METL Reg. Trade Mark

OTHER STRONG STEAM SPECIALTIES

Reducing Valve — 70 Series Trap — "SY" Strainer

STRONG

▼ BREVITY—Identify by IEN - 12816 If you write the maker ▼

EXTINGUISHING . . Hand liquid unit is air pressurized, 1 quart capacity

Source: AMERICAN-LAFRANCE-FOAMITE CORP. 903 Erie St., Elmira, N. Y.

Underwriter approved

Vaporizing liquid is directed at a fire by air pressure in the housing of this new extinguisher when a releasing lever is pressed. The unit is suited for use on Class-B and C fires including flammable liquids and electrical equipment. When it has been emptied it can be refilled with fresh liquid and air pressure built up by connection through its inlet fitting to a shop air line. A gage reads the pressure.

Alfco Pressurized Fire-Gun is the designation. Intended applications are in motor vehicles, aircraft, street and railroad cars, motor boats, construction equipment, shop cranes.

▼ BREVITY—Identify by IEN - 12817 If you write the maker ▼

SANDING . . Mandrels and sleeves for application by a portable tool

Source: FIL-MAR PRODUCTS CO. 1134-38 Orlando Ave., Dept. IEN-1, Akron 20, Ohio

Pieces shown about $4

New line of expanding mandrels measuring ½ to 2 in. in diameter by ½ to 1½ in. in length is equipped with ¼-in. shanks in this new kit of sanding mandrels and abrasive sleeves. The sleeves are supplied in fine and coarse abrasives. They slide over the mandrels and are gripped in place on the rubber bodies by tightening a nut on the shank. They then are ready for use.

▼ BREVITY—Identify by IEN - 12818 If you write the maker ▼

GAGE . . Flexible steel rule, retracts into a rectangular metal case

Source: CARLSON & SULLIVAN INC. 1712-16 California Ave., Monrovia, Calif.

In your hardware store

Black markings appear on a white surface on the ¾-in. steel blade in this new flexible rule. It is known as the Big Chief. The bottom edge is graduated in inches from 1 to 120. The top edge is graduated in feet. The blade can be replaced in the event that it is damaged. Its curved section makes the unit self supporting when fully extended in a straight line.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 12819 If you write the maker ▼

For Faster, Smoother Painting

EDWARD E. ROBINSON

MASTER PAINTER BRUSHES

SPEED up maintenance or production painting by using Robinson's *TIPPED* nylon Master Painter Brushes. Every nylon filament is *TIPPED* on Robinson's newly developed nylon *TIPPING* machine assuring superior paint pick up and smoother, faster lay down by every Robinson *TIPPED* Nylon Master Painter brush.

Robinson's Master Painter Brushes made of Pure Bristle, Bristle-horsehair, or *TIPPED* Nylon, mixed to performance proved formulas are available through Distributors, Paint and Oil Dealers and Hardware stores. Catalogue mailed on request.

EDWARD E. ROBINSON
INCORPORATED
95 PARK AVENUE • NEWARK 10, N. J.

▼ BREVITY—Identify by IEN - 12820 If you write the maker ▼

Yours for easier hydraulic circuit planning — by makers of the famous HydrOlLic Pumps and Controls

New JIC Circuit Guide AND DRAWING TEMPLATE

Denison's handy, 32-page JICircuit Guide, complete with plastic drawing template, gives you full information on JIC hydraulic symbols and their use. It saves time, makes circuit planning easier, quickly identifies symbols approved by the Joint Industry Conference. Although priced at $1.00, it is available *without cost or obligation* to anyone in hydraulic designing or engineering. Just submit your name and position; your kit will be sent promptly, with our compliments. Or if you contact the Denison representative in your area, he will see that you get a copy. Write today!

DENISON HydrOlLics

The DENISON Engineering Co.
1150 Dublin Road
Columbus 16, Ohio

▼ BREVITY—Identify by IEN - 12821 If you write the maker ▼

Both Proportional and Automatic Reset Responses Adjusted by . . .

ONE KNOB

Taylor's new BI-ACT* Controller has *two* control responses, proportional and automatic reset, both tuned in to process requirements by one stability adjustment knob. Integral cut-off relay permits panel or field mounting. Change from direct to reverse action is made easily, without disconnecting controller. Plug-in manifold (optional) permits connecting or removing controller without disturbing pipe connections.

The BI-ACT* Controller is applicable to almost any process. It is designed as an inexpensive unit in the famous three-tart TRANSET* Control System, to replace the TRI-ACT* Controller on applications where the Pre-act control response isn't essential. For full information, see your Taylor Field Engineer or write for **Bulletin 98097,** Taylor Instrument Companies, Rochester, N. Y., or Toronto, Canada.

Instruments for indicating, recording and controlling temperature, pressure, flow, liquid level, speed, density, load and humidity.

*Reg. Trade Mark

TAYLOR INSTRUMENTS MEAN ACCURACY FIRST

▼ BREVITY—Identify by IEN - 12822 If you write the maker ▼

IF YOU WALK ON IT IT CALLS FOR OPEN STEEL FLOORING

Ready for you—

THE *NEW* IDEA-BOOK "VERSATILE" OPEN STEEL FLOORING

Write for your free copy today!

This 16-page book tells you and *shows* you all about Open Steel Flooring—the strong, durable, ventilated, versatile surface that provides industrial plants with safety-sure walkways, platforms, stairs, floors, catwalks, etc. Get a copy and read the Specifications that assure top quality Open Steel Flooring . . . the flooring tailor-made to fit your individual needs—that provides safe walking-working conditions in your plant.

OPEN STEEL FLOORING INSTITUTE, INC.
2311-R First National Bank Building • Pittsburgh 22, Pa.

MEMBERS — These Manufacturers assure top quality engineered grating.

IRVING SUBWAY GRATING CO., INC. Long Island City, N. Y.
THE TRI-LOK COMPANY Pittsburgh, Pa.
STANDARD STEEL SPRING CO. Gary, Indiana
BLAW-KNOX COMPANY Pittsburgh, Pa.
WALTER BATES COMPANY, INC. Joliet, Illinois
BORDEN METAL PRODUCTS CO. Elizabeth, N. J.
HENDRICK MANUFACTURING CO., Carbondale, Pa.

BREVITY—Identify by IEN - 12823 If you write the maker

. . . the grinder with a head for hard work!

ABRASIVE No. M34 has a head for hard work — a Pope-SKF motorized spindle driving a 6" segmental wheel. There's no gearing and belting. This means more stability and much more reliable performance on the job. For dies, washers, punches, spacers, parallels, chasers, raising blocks, and other flat grinding work, the ABRASIVE No. M34 is in a class by itself. For details, write ABRASIVE MACHINE TOOL CO., 18 Dunellen Rd., East Providence 14, R. I. Distributors throughout the world.

SPECIFICATIONS

Work Capacity: 24" long, 8" wide, 12" high.

Spindle: Built-in 5 hp motor, 3450 R.P.M. ball and roller bearing.

Wheel Size: Segment type, 6" diam.

Table Size Overall: 59" x 10½".

Net Wt.: 3000 lbs.

ABRASIVE ACCURACY BOOSTS PRODUCTION

Abrasive Quality is Reflected in the Finish of Your Product

BREVITY—Identify by IEN - 12824 If you write the maker

Move AIR or GAS with Billmyre BLOWERS & EXHAUSTERS

Constant pressure maintained through entire capacity range. External bearings—no internal lubrication required. Hence, air delivered clean and dry.

Our engineering staff will help with problems in handling air or gases of various densities, temperatures or chemical compositions. Write or phone.

Centrifugal Type . . . Single and Multi-Stage . . . ½ lb. to 7 lbs. pressure . . . ½ h.p. to 500 h.p.

LAMSON

Send for Bulletin B-5 — gives descriptions, applications, specifications. Lamson Corporation, Billmyre Blower Division, 442 Lamson Street, Syracuse 1, New York.

BREVITY—Identify by IEN - 12825 If you write the maker

Try This Amazing New Shakeproof Fastening!

KEPS TRADE MARK

The pre-assembled nut and "SHAKEPROOF" Lock Washer

Two parts are handled as one . . . lock washers can't drop off. Every nut is locked tight by the powerful tapered-twisted locking teeth of a "SHAKEPROOF" Lock Washer.

INCREASE PRODUCTION AND CUT COSTS WITH KEPS. WRITE FOR FREE TESTING SAMPLES AND KEPS DATA BOOK TODAY!

SHAKEPROOF inc.

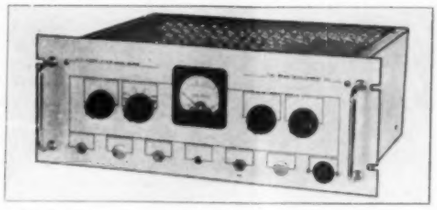
Division of Illinois Tool Works

2501 North Keeler Avenue, Chicago 39, Illinois

BREVITY—Identify by IEN - 12826 If you write the maker

ELECTRONIC PRODUCT . . Amplifier to step up signals to an oscillograph

Source: BRUSH DEVELOPMENT CO.
Instrument Division 32, Cleveland 14, Ohio



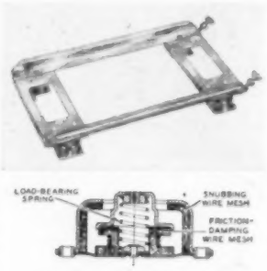
Model BL-962 is a new direct-coupled rack-mounted amplifier for use with the company's magnetic direct-writing oscillograph in studies of static or dynamic conditions such as strains, displacements, pressures, light intensities, temperatures and ac or dc voltages or currents. Voltage gain is approximately 1000X which is sufficient to give one millimeter of deflection on the oscillograph chart per millivolt input. Frequency response is essentially linear from dc. to 100 cycles per sec. when the amplifier is used with a penmotor.

An attenuator with five factor-of-ten positions, gain control, calibrating meter and controls to determine input voltages are assembled on the control panel on the face of the housing. A balancing potentiometer is provided to electrically bias the oscillograph pen to any position on the chart. Input jack and output sockets are located on both the front panel and the rear of the chassis to facilitate connection.

BREVITY—Identify by IEN - 12827 If you write the maker

ISOLATING . . Vibration insulators for airborne electronic equipment

Source: BARRY CORP.
838 Pleasant St., Watertown 72, Mass.



To de-bump the plane ride

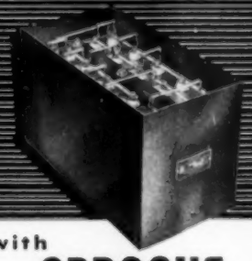
Electronic apparatus such as radio, radar, loran, to be installed in an airplane, can be mounted on this new design in the company's line of vibration-isolating bases. It protects against normal vibration in the plane and also against shock that may be incurred in forced landing. The base meets requirement of Specification AM-E-19 for equipment sizes listed in JAN-C-172A. Load ranges are between ¼ and 40 lb. per unit mount for the isolating units at the corners of the base.

In addition to the complete assembly, the company is prepared to supply the All-Metl isolator shown in the illustration in three load ranges with overall from 8 to 35 lb. per unit. A second design, not illustrated, employs an air-damping assembly. This design is available in a single load range between 8 and 16 lb. per unit.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 12828 If you write the maker

CUT POWER COSTS!



with

SPRAGUE

POWER FACTOR CAPACITORS

Lower power bills . . . greater loads from present circuits . . . less wiring, transformer, and switchgear costs in new installations—these are some of the advantages of SPRAGUE "on-the-spot" low-voltage industrial power factor correction capacitors. Write for a free copy of the Sprague Power Factor Correction Guide today and find out how you, too, can save money with Sprague Capacitors.

SPRAGUE ELECTRIC COMPANY
NORTH ADAMS MASS.

BREVITY—Identify by IEN - 12829 If you write the maker

BURNDY • BURNDY

BURNDY • BURNDY • BURNDY

for top efficiency make connections with the 'BIG 3'

QIKLUG wrench-installed terminal for rugged service.

SERVIT exceptionally strong, compact service connector

See your Burndy distributor

SCRULUG light-duty, one-piece compact terminal

BURNDY

BURNDY ENGINEERING CO., INC.
NEW YORK 54, NEW YORK

BREVITY—Identify by IEN - 12830 If you write the maker

You will find Raybestos-Manhattan packings and gaskets in machines like this reciprocating boiler-feed pump, and in practically every other type of fluid-handling equipment in industry. The long line of R/M packings and gaskets is relied on by experienced engineers, not only for pumps, but for valves, compressors, expansion joints, hydraulic rams, and wherever trouble-free service is essential. The R/M distributor near you will gladly help you select the right packing or gasket for your needs. Or write for the R/M Packing Catalog.

R/M PACKINGS

RAYBESTOS-MANHATTAN, INC.
PACKING DIVISION, MANHEIM, PA.

FACTORIES: Bridgeport, Conn.; Manheim, Pa. No. Charleston, S.C.; Passaic, N.J.

RAYBESTOS-MANHATTAN, INC.: Manufacturers of Packings • Asbestos Textiles • Mechanical Rubber Products • Abrasive and Diamond Wheels Rubber Covered Equipment • Brake Linings • Brake Blocks • Clutch Facings Fan Belts • Radiator Hose • Powdered Metal Products • Bowling Balls

▼ BREVITY—Identify by IEN - 12832 If you write the maker ◁▷▼

BOOST PRODUCTION

COBURN

OVERHEAD CONVEYING EQUIPMENT

Meet today's need for maximum plant production, increased efficiency and faster handling of materials with Coburn Overhead Conveying Equipment. It gives you unobstructed floor space, requires very little headroom, makes it easy to spot work directly over machines. Loads up to 3000 lbs. handled by hand chain or electric hoist; power-operated equipment also available.

For additional information write to Sales and Engineering, 56 Sterling St., Clinton, Mass., or consult your classified telephone directory. Write today for catalog #220.

EAST: Wickwire Spencer Steel Division, Clinton, Mass.
WEST: The Colorado Fuel & Iron Corporation, Denver, Colorado
PACIFIC COAST: The California Wire Cloth Corporation, Oakland, California

COBURN PRODUCTS
PRODUCT OF WICKWIRE SPENCER STEEL DIVISION
THE COLORADO FUEL AND IRON CORPORATION
CF&I

▼ BREVITY—Identify by IEN - 12833 If you write the maker ◁▷▼

FOR SAFETY *Interlock!*

PROTECT MEN AND EQUIPMENT AGAINST "MENTAL LAPSE".

Operator is shown entering compartment which is interlocked with protective equipment. Diagram shows key interchange scheme.

KIRK KEY INTERLOCK *System*

Provides a predetermined sequence of operation...and prevents "mental lapse" which might cause damage to men and equipment.

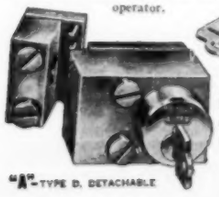
A Typical application is shown above. "A" is interlocked with "B" to prevent opening of door "A" when switch (locked by "B") is closed and in service. Only when protective switch (with "B" interlock) is opened, and locked open with a Kirk Key can the same key be released to unlock "A" (on door).

This makes sure that circuits in compartment with "A" interlock are dead and safe to approach. The main switch locked by "B" cannot be reclosed until "A" is locked closed, making the same key available to unlock "B", and thus allow the switch to be closed in again.

The key can now be removed from "B", indicating that the circuits are energized.

When removed, the key is usually kept on a rack and used only by an authorized operator.

"B"-TYPE F FLAT MOUNTING



"A"-TYPE D, DETACHABLE

Unlimited interlocking schemes may be arranged from many types of Kirk Key Interlocks

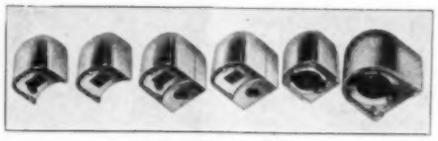
Write for Bulletin 1700 for many more details.

RAILWAY AND INDUSTRIAL ENGINEERING CO.
KERR STREET • • • • GREENSBURG, PENNSYLVANIA

▼ BREVITY—Identify by IEN - 12835 If you write the maker ◁▷▼

CONNECTOR.. Weatherproof receptacle and switch, 2 and 3 wire circuits

Source: REVERE ELECTRIC CO.
6007-11 Broadway, Chicago 40, Ill.



For conduit assembly

A metal plate on which this new receptacle and switch are mounted acts as the base under a cast cover in weatherproof construction of 2 and 3 wire receptacles and of companion snap switches. The receptacles are available for 2-wire, 115 and 250-volt, 15 and 10-amp. ratings respectively. The 3 wire Twistlock units rate 15 amp. and 20 amp. respectively on 110 and 220 volts. Two forms of surface plate are flat and rounded for various outdoor mounting positions.

▼ BREVITY—Identify by IEN - 12836 If you write the maker ◁▷▼

FLOORS.. Sealing liquid to brush into wood and concrete floors

Source: ROCK-TRED CORP.
7430 N. St. Louis Ave., Skokie, Ill.

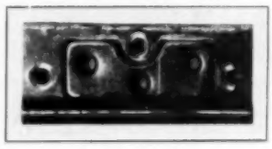
Available in red and gray colors

Penetred trade names a new resin-base sealing liquid that acts as a floor preservative and dustproofer. Application by brush or hair broom results in a sealed surface that protects against slipping and is resistant to penetration by moisture, gases, chemicals, oils, greases, mold. The liquid dries in 4 to 6 hr. for light traffic. It is packaged in 1, 5 and 30-gal. containers ready to use.

▼ BREVITY—Identify by IEN - 12837 If you write the maker ◁▷▼

HINGE.. Butt design for a door with wings that fold flush together

Source: AMERICAN HINGE CO.
51 Thomas St., Bound Brook, N. J.



Made in England

No recessing is required in either a door or its frame for application of this new Hurlinge butt hinge. It is designed so the two leaves fold flush together to fit within a correct gap between the door and frame when mounted on, rather than in, both. Construction is in steel formed to shape. Two fingers completing the assembly of the smaller leaf act as gages to position this leaf on a door.

Three sizes in the line are 2½, 3 and 4 inches. Eight finishes include bright steel or finish in brass plate, bronze, cadmium, chromium plate, polished or satin finish, in a prime coat or in colonial black. List price for the 4-in. unit is $4.44 to $9.84 per dozen without the screws. Loose pins add 5 cents per pair.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 12838 If you write the maker ◁▷▼

NEW GRINDER SAFETY with GREATER POWER

No. 4 Series

INGERSOLL-RAND *introduces* ANOTHER BIG FIRST

the **NEW** *overspeed* SAFETY COUPLING

The Overspeed Safety Coupling supplements, and is completely independent of, the regular factory-set weight type governor used in Ingersoll-Rand Air Tools.

This built-in unit, which operates in case of failure of the regular governor, eliminates the possibility of dangerous overspeed operation. If, for any reason, the motor speed exceeds the safe wheel speed, the NEW Overspeed Safety Coupling automatically uncouples the arbor and the wheel from the motor, making it impossible to operate the Grinder until the cause of overspeeding has been corrected.

GRINDER OPERATORS *Also Asked for* THESE *Extra* FEATURES

- Long Life Arbor Construction
- 20% More Power
- Quieter Exhaust
- Extra Exhaust Positions
- Rubber-Faced Valve
- Optional Handle

Call us today and arrange for a demonstration of this powerful new Series 4 Air Grinder.

543-B

Ingersoll-Rand
11 BROADWAY, NEW YORK 4, N. Y.

▼ BREVITY—Identify by IEN - 12839 If you write the maker ◁▷▼

CUT YOUR COSTS ON REPEATING-PROCESSES

Use General Electric Process Timers For Increased Efficiency, Big Savings

TYPE TSA-14 PROCESS TIMER
Used for circuits requiring repeating ON-OFF control

WHERE YOU HAVE PROCESSES or machines which operate on repetitive cycles, depend on the G-E Type TSA-14 process timer for automatic on-off control. Here are three important ways you benefit:

1. Reduce waste.
2. Assure uniform operation.
3. Cut production costs by freeing workers to handle other jobs.

TSA-14 TIMER with timing cycles from 10 seconds to 8 hours can be used for control of pumps, agitators, mixing valves, blowers, exhaust fans, ovens, filter cleaning, and many other applications.

WEATHER-RESISTANT CASE safely houses the time-proved Telechron* motor which is designed to give you years of accurate operation. Low installation and maintenance costs further increase your savings.

Order from your local G-E representative. Or write for Bulletin GEC-525, Section 603-119, General Electric, Schenectady 5, N. Y.

*Registered Trade Mark, Telechron, Inc.

GENERAL ELECTRIC

▼ BREVITY—Identify by IEN - 12840 If you write the maker ◁▷▼

DISTRIBUTE METAL THIS FAST *EFFICIENT* WAY

Efficiency is stepped up tremendously with inexpensive Cleveland Tramrail equipment — often 200% to 300%. Delivery time of metal from cupola to molds is cut drastically. This means less heat loss. Safety is improved and workers' fatigue reduced.

GET THIS BOOK!
BOOK No. 2008
Packed with valuable information...

CLEVELAND TRAMRAIL DIVISION
THE CLEVELAND CRANE & ENGINEERING CO.
4206 East 285th St. • Wickliffe, Ohio

CLEVELAND TRAMRAIL

▼ BREVITY—Identify by IEN - 12841 If you write the maker ◁▷▼

Globe Loading Lift

Speeds Loading and Unloading

Trucks, trailers, railway cars, and cargo planes can be loaded faster and at lower cost with a Globe Loading Lift. What's more, material can be handled with less risk of damage to cargo or injury to workers.

The Globe Loading Lift is a simple elevating platform that eliminates the need for ramps, gangplanks, and "muscling" of cargoes. Platform recesses into floor or driveway in "down" position. Accurate control makes for easy, flush-leveling to keep goods moving on an even plane.

Got a Lifting Problem?

GLOBE

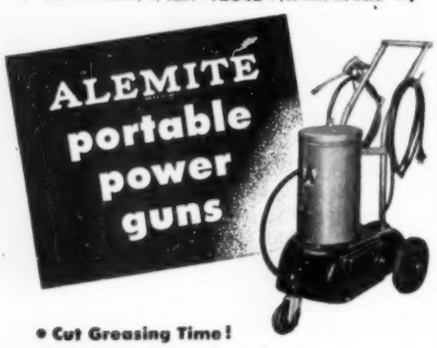
has the answer

Muscle is the world's most wasteful lifting power. A Globe OnLIFT will do it cheaper and better.

For helpful information on Self-Leveling Ramps, Machine Loading Lifts, Industrial Truck Service Lifts, Production Lifts, etc., write for bulletin IE-312.

GLOBE HOIST COMPANY • 1600 E. Mermaid Lane, Philadelphia 18, Pa.
(Factories at Des Moines, Iowa & Philadelphia, Pa.)

BREVITY—Identify by IEN - 12842 If you write the maker



- **Cut Greasing Time!**
- **Keep Lubricants Clean!**
- **Build 3300 lbs. Pressure Instantly!**

Air or electric operated, these Alemite 25-lb. capacity power guns handle all types of pressure gun greases that seek their own level. Ideal for use wherever hand methods are impractical. Electric gun equipped with 110 V. Universal motor.

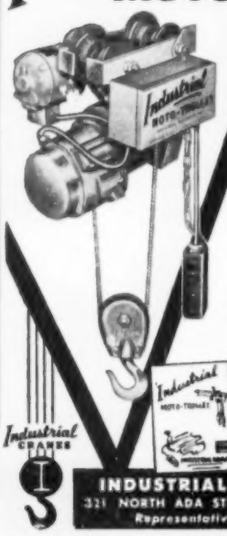
WRITE for free catalogue.

ALEMITE
Industrial Lubrication Equipment

Dept K-121, 1850 Diversey Parkway
Chicago 14, Illinois

BREVITY—Identify by IEN - 12843 If you write the maker

Industrial MOTO-TROLLEY



MAY BE ATTACHED TO YOUR STANDARD ELECTRIC HOIST . . .

ADJUSTABLE TO ACCOMMODATE WIDE VARIETY OF BEAM SIZES

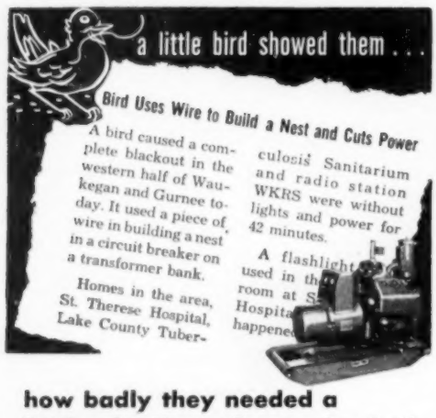
- Crown-tread machine steel wheels with hardened drivers.
- Each wheel equipped with double-row precision ball bearings and removable-head axle with Alemite grease fittings.
- Powered by a crane-duty high-torque totally enclosed motor of 30 minute 55 degree rating.
- Magnetic contact panel has transformer to reduce voltage in single speed push button control circuit.
- 4-button control station operates single speed trolley and hoist motions.

Write for Literature

Industrial CRANES

INDUSTRIAL EQUIPMENT CO.
321 NORTH ADA STREET CHICAGO 7, ILLINOIS
Representatives in Principal Cities.

BREVITY—Identify by IEN - 12844 If you write the maker



how badly they needed a Fairbanks-Morse Generating Set!

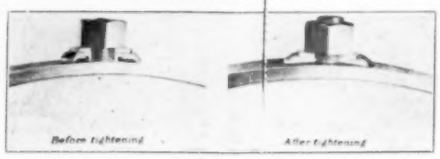
Why gamble with power failure? Install a Fairbanks-Morse Generating Set. It provides peace of mind, and protects the lives and welfare of persons on your premises. Fairbanks-Morse offers generating sets to meet every requirement. See your local Fairbanks-Morse dealer today or write Fairbanks, Morse & Co., Chicago 5, Ill.

FAIRBANKS-MORSE,
a name worth remembering

BREVITY—Identify by IEN - 12845 If you write the maker

SEALING . . Rubber washer for liner bolts in wet type grinding

Source: ALLIS-CHALMERS MFG. CO.
909 S. 70th St., Milwaukee 14, Wis.



Before and after tightening

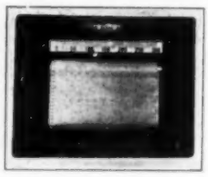
Molded rubber is now available in a special shape for 1¼ and 1½ in. liner bolts employed in wet-grinding ball, rod and pebble mills to prevent leakage around the bolts. The rubber also absorbs a good share of the pre-stressing load caused by over-tightening as well as some of the impact due to the mill operation in service.

Before tightening the bolt the washer contacts the mill cylinder on inner and outer rings. These rings flatten down to provide a seal in straight and curved direction even when mill diameter is quite small.

BREVITY—Identify by IEN - 12846 If you write the maker

RECORDING . . Strip chart instrument scans 270 temperature points in sequence

Source: MINNEAPOLIS-HONEYWELL REGULATOR CO.
4456 Wayne Ave., Philadelphia 44, Pa.



ElectroniK recorder

The recorder illustrated forms part of the company's new ElectroniK scanning equipment with which temperatures are measured successively at 270 points at the rate of one point per second. If any of these points deviate from a set temperature more than a certain amount the instrument closes visual and audible alarm circuits to indicate need for correction in the equipment involved.

The equipment includes, in addition to the recorder, a rectifier unit to operate stepping switches and control circuits, a control unit for the scanning system, a required number of switch units, each including a specified number of stepping-switch assemblies and thermocouple connections and the necessary thermocouples. The equipment is intended particularly for processing operations where close control must be maintained at a large number of separate points.

BREVITY—Identify by IEN - 12847 If you write the maker

TUBES . . Condensed technical data on alloy steel tubes for mechanical uses

Babcock & Wilcox Tube Co.
4027-31 Fourth Ave., Beaver Falls, Pa

Bulletin TDC-141 is a 4-page presentation of information on medium-carbon full-hardening alloy steel tubes. The information concerns analyses on 11 grades with Type C-1040 for comparison, metallurgy, effect of alloying constituents, fabrication, thermal treatment.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 12848 If you write the maker

use STAINLESS STEEL FLOATS

YOU can solve virtually all your float problems by standardizing on Stainless Steel Floats from Chicago Float Works. You get longer service and less maintenance because Stainless Steel Floats resist corrosion and withstand high temperatures and pressures. Extreme strength insures them against collapsing and they always respond perfectly to level fluctuations because of permanently high buoyancy. Install our high quality Stainless Steel Floats and be sure of long, dependable operation!

WRITE FOR FREE CATALOG

This illustrated catalog gives complete details on sizes, shapes, spud connections, and engineering data on Chicago's complete line of standard or special floats.

CHICAGO FLOAT WORKS, INC.
2326 S. Western Ave., Chicago 8, Illinois

BREVITY—Identify by IEN - 12849 If you write the maker

Get DRY AIR from your compressor!

WESTINGHOUSE TYPE "W" WATER-COOLED AFTERCOOLER

Easily installed . . . delivers *dry* compressed air for paint spray, laundry equipment, controls, dental laboratories and other applications. Central water-cooled core is high-efficiency spined copper tubing within 2½ O.D. steel tubing with brass header. Water connections at end, air connections at top, drains at bottom of headers. Drain cock or automatic drain valve optional. Three sizes . . . for 1½ and 2 HP, 3 and 5 HP, and 7½ and 10 HP compressors. Write for Bulletin 9460-21 and name of nearest distributor.

INDUSTRIAL PRODUCTS DIVISION — WESTINGHOUSE AIR BRAKE COMPANY WILMERDING, PENNA.

Factory Branch: Emeryville, Calif. • Distributors throughout the United States . . . Consult your Classified Directory • Distributed in Canada by: Canadian Westinghouse Co., Ltd., Hamilton, Ontario

BREVITY—Identify by IEN - 12850 If you write the maker

you GO with OHIO GREEN

WORLD'S FINEST SLITTER KNIVES AND SHEAR BLADES made in OK Battle Axe, OK Dura Chrome and OK Standard.

The cutters shown are used on gang slitters — side trimmers and for tin plate. They are held to ± .00025 tolerances and are given an extremely high finish. Closer tolerances can be furnished on request.

We also furnish hardened and unhardened spacers with the same close tolerances and high finish as the slitters.

The large shear blade shown is furnished in the above three grades for shearing any type of metal and are made to fit any machine. Send us your inquiries giving quantities and sizes.

OK ROTARY SHEARS-BLADES are designed to give maximum service — tough as they come!

OHIO KNIFE Co. CINCINNATI 23, OHIO
WORLD'S LARGEST EXCLUSIVE MANUFACTURERS OF KNIVES

BREVITY—Identify by IEN - 12852 if you write the maker

DESIGN FOR Ruggedness

HARTWELL H-5150 Flush Latch

The new H-5150 flush latch is ideal for any use calling for a large, rugged latch. Its bolt contains a spring loaded button that allows for variations in closure contact due to misaligned doors and frames. The 1¼" x 1½" operating trigger makes this latch easy to open even when operator is wearing heavy gloves or mittens. The H-5150 is made of stainless steel, coated cold rolled steel or heat treated aluminum in various offset combinations for different door and frame thicknesses.

Write for new Hartwell Flush Latch and Hinge Catalog.

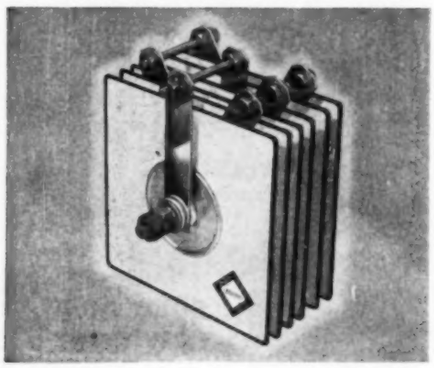
HARTWELL COMPANY

9035 VENICE BOULEVARD, LOS ANGELES 34, CALIFORNIA

BREVITY—Identify by IEN - 12853 if you write the maker

The NEW Belcon BALANCED WATTAGE SELENIUM RECTIFIERS

WILL MEET YOUR EXACTING REQUIREMENTS FOR MAGNETIC AMPLIFIER APPLICATIONS



● Selenium rectifiers for use in modern magnetic amplifiers, must have special rectifier characteristics in order to achieve the maximum results when used with the newer grain oriented toroidal cores.

Belcon Balanced Wattage Rectifiers are manufactured to have these special characteristics: They have a very much higher forward to reverse-current ratio — as high as fifteen hundred to one or better; they have a low forward-voltage drop — usually as low as 1.2 volts per cell.

Belcon also manufactures a complete line of Rectifiers for industrial applications as well as specialized Rectifiers to fit unusual applications. Such units are frequently smaller in size and therefore may cost less than the standard line due to the exclusive Belcon Balanced Wattage principle.

WHY BALANCED WATTAGE

Belcon employs a variable blocking voltage — current density ratio resulting in a balanced wattage rectifier. A Belcon Rectifier processed to block 40 volts rms, for example, will deliver 1 ampere; the same size rectifier processed to block but 20 volts rms will deliver 2 amperes or more.

BELCON RECTIFIERS

Division of Bogue Electric Manufacturing Company

40 IOWA AVENUE • PATERSON 3, N. J.

MAGNETIC AMPLIFIERS
MAGNETIC CONTROLLERS
AC & DC MOTORS
AC & DC GENERATORS
VOLTAGE & SPEED REGULATORS
SWITCHBOARDS

BREVITY—Identify by IEN - 12855 if you write the maker

TESTING . . Magnetic dynamometer for motors to 0.4 hp. and 10,000 rpm.

Source: DUNCAN & BAYLEY INC.
783-87 Hertel Ave., Buffalo 7, N. Y.

For laboratory use

Small motors to be power tested are connected by a flexible coupling to a shaft projecting from the front panel of this new dynamometer. When a circuit switch is closed the motor drives a brake adaptation of the company's magnetic clutch, previously described IEN-8124-50. A small tachometer generator provides power to read speed on one of two dials and in oz. of torque on the other.

Two speed scales read in 50-rpm. divisions to 4,000 rpm. and in 100-rpm. divisions to 10,000 rpm. Maximum that can be measured on the 4,000-rpm. scale is 0.16 hp. Maximum on the 10,000 rpm. scale is 0.40 hp. Maximum dissipation for 3 min. is 90 watts. Continuous rating is 25 watts.

Minimum speed for proper reading is about 500 rpm. Torque readings are positive and accurate. The unit can be recalibrated for change in bearing drag and windage if tests are to be conducted at wide extremes of speed and with high accuracy. Operation is on 110-volt ac. or dc.

BREVITY—Identify by IEN - 12856 if you write the maker

MELTING . . Electric tank to apply dip coat compounds and waxes

Source: RANDALL MFG. CO.
803 Edgewater Road, New York 59, N. Y.

Minimizes maintenance

Five sizes are included in the company's new Ramco air-jacketed electrically-heated melting tanks. They handle compounds and waxes employed to coat finished metal products for protection in storage and shipping. The air-jacket forms a passage which conducts heat from the bottom of the outer tank up around all sides of the inner melt tank to eliminate the possibility of hot spots. An overlapping flange on the inner tank and the outer shell prevents wax from reaching the heating elements. The assembly is equipped with an insulated metal lid, angle reinforced and held open by a chain with a fusible link. The link melts and the lid closes by gravity in the event of fire.

Instrument and controls are mounted on one side of the outer shell where a drip guard protects a thermostat, safety switch, magnetic contactor and junction box. The thermostat has an adjustable range between 100 and 550 deg. F. for normal operation at about 180 deg. F. The component parts carry Underwriters' Laboratory approval. Overall dimensions are 30 to 48 in. in length, 18 to 30 in. in width, 14 to 30 in. in depth. Overall height is 36 to 42 inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 12857 if you write the maker

ELECTRICALLY-CONTROLLED

AIR CYLINDER

Complete POWER UNIT WITH BUILT-IN CONTROLS

THE Bellows electrically-controlled BSM Air Motor is a complete reciprocating straight line power unit. Performs any pull, push or lift operation at a touch of a button. Built-in speed controls give positive control of piston rod speed in either or both directions. No extra valves to buy . . . no expensive piping to install. Only one air connection required which may be flexible hose. Available in 1¼", 2½", 3⅛" and 4½" bores — any stroke length.

Dept. IEN 1251

Write for Specification Bulletin BSM

The Bellows Co.
Akron, Ohio

BREVITY—Identify by IEN - 12858 if you write the maker

HERMAN NELSON STANDARD MODEL PORTABLE HEATER

Gasoline engine powered.
Uses gasoline for heating fuel.
250-585,000 BTU capacity.
Completely self-contained.

PLAN NOW ON PORTABLE HEAT

...Stop Winter Shutdowns!

HERMAN NELSON Portable Heaters are specially designed for rugged, heavy-duty service. Heat is delivered where you need it . . . when you want it . . . for either construction or standby. Superior Herman Nelson features include *"sealed flames"* for elimination of dangerous fumes . . . fire hazards. Economical operating cost . . . easily moved and operated by one man. Available in many models and types—capacities up to 450,000 BTU.

Plan now on Herman Nelson units for quick, clean, safe heat this winter. For full information write Dept. **IN-12.**

AAF

HERMAN NELSON

Division of AMERICAN AIR FILTER COMPANY, INC.
MOLINE, ILLINOIS

BREVITY—Identify by IEN - 12859 if you write the maker

Write for Catalog

VERSATILE— handles dozens of finishing operations

PORTABLE— use it where it's needed

Delta 6" Abrasive Belt FINISHING MACHINE

This husky, dependable machine is designed to handle the numerous sanding, polishing and finishing operations common to most shops. It's built to last, with a heavy trunnion carrying the tilting table—sealed, lubricated-for-life ball bearings, and many other special DELTA features.

- **Operates vertically or horizontally**
- **Table tilts easily and quickly, 20° toward belt, 45° away from it.**
- **Adjustable fence for edge sanding, adjustable back for flat sanding—in horizontal position.**
- **Fully guarded for complete protection.**

There's a Delta Power Tool for Your Job- Wood or Metal Working

53 MACHINES—246 MODELS—MORE THAN 1300 ACCESSORIES
For Delta dealers see your Classified Phone Directory under "Tools"

DELTA MILWAUKEE

DELTA POWER TOOL DIVISION
Rockwell MANUFACTURING COMPANY
615 N E. VIENNA AVENUE, MILWAUKEE 1, WISCONSIN

BREVITY—Identify by IEN - 12860 if you write the maker

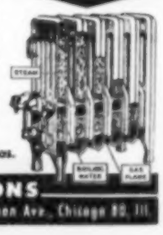
REDUCE SICKNESS AND ABSENTEEISM...

Increase Work Output with CLOW GASTEAM RADIATORS

Steam Heat... Where You Want It...When You Want It!

SEND FOR COMPLETE INFORMATION, INCLUDING OPERATING PRINCIPLES, INSTALLATION DATA, TYPICAL INSTALLATIONS AND PRICES

The health of your office employees is vital—to them and to you. Keep them warm and comfortable with efficient Clow Gasteam Radiators, the independent units that make their own steam heat with gas. No boiler or water connections necessary. No need to waste heat throughout your plant in order to heat isolated offices.



Available for City, Butane or Propane Gas.

JAMES B. CLOW & SONS
201-299 N. Talman Ave., Chicago 80, Ill.

BREVITY—Identify by IEN - 12861 If you write the maker

The economical, sure way—to avoid ROT and TERMITE damage!

Where steam and vapor from industrial processes are prevalent wood decay is accelerated—use Wolmanized lumber to avoid costly damage.

Wolmanized* *pressure-treated* Lumber assures *lasting* protection. High pressure (150 p.s.i.) drives the preservatives deeply into the wood. Volumetric absorption of the preservative solution is measured in gallons per cubic foot—not in feet of coated surface.

Millions of feet of Wolmanized pressure-treated Lumber have been in service under severest conditions, for years. Write for facts about Wolmanized Lumber. Or, ask for copy of "Service Records" of uses in scores of industries and applications.

American Lumber & Treating Co.
1641 McCormick Bldg., Chicago 4, Ill.
* Wolmanized is a registered trademark of American Lumber & Treating Co.

Wolmanized PRESSURE TREATED Lumber
Stops Rot and Termites

BREVITY—Identify by IEN - 12862 If you write the maker

FIRST AID FOR INDUSTRIAL FLOORS

BITUCOTE Ready Patch

PREVENT ACCIDENTS
Keep Bitucote Ready Patch on hand, on a "Crash Truck, to repair floor breaks as soon as they occur
Ready to use—no extras to add
Permanent—Economical
No waiting time—traffic can roll as soon as hole is repaired

ORDER TODAY
Satisfaction Guaranteed
$90.00-55 gal. drum
$55.00-30 gal. drum
Includes Primer
F.O.B. St. Louis

Send for free bulletin—"STOP FLOOR HAZARDS".

Bitucote PRODUCTS
Division of BRIDGES PAVING CO.
8411 CENTRAL INDUSTRIAL DRIVE • ST. LOUIS 10, MO.

BREVITY—Identify by IEN - 12863 If you write the maker

HERE'S DUO-SAFETY'S TWO-SIDED . . . ALL ALUMINUM MAINTENANCE LADDER

TYPE AL2C

Double Size Platform

Especially Sturdy Spreader

A. Angle Clip Brace.
B. Serrated, Reinforced Step.
C. Angle Brace.

A new ladder in the famous Duo-Safety line of strong, sturdy, aluminum industrial ladders. Has a double climbing side, large top platform, rubber safety boots, light, strong aluminum construction. Ideal for all types of overhead maintenance work including use with extension planks. Available in sizes from 3 to 16 feet and is collapsible for storage in a limited space.

Free, Colorful File Catalog . . . Sent on Request

DUO-SAFETY LADDER CORP.
811 NINTH ST. OSHKOSH, WIS.

NEW LITERATURE

Brief reviews to advise you of available new information published by the manufacturers covering products they offer for your use. Identification, size of the material, information it contains so you can judge its value to you.

ADHESIVES . . Also coatings and sealing materials; data on 25 out of some 1,000 types, uses. Booklet Z-SCD, 8 pages. Minnesota Mining & Mfg. Co., 409-13 Piquette, Detroit 2, Mich. IEN-01450

AIR CONDITIONING . . Also air-handling and Precipitron equipment; condensed illustrated review. Bulletin B-5164, 16 pages. Westinghouse, 202 Readville St., Boston 36, Mass. IEN-01451

ALLOYS . . Aluminum-bronze alloys for process industry use; properties, fabrication, examples. Bulletin PI-3, 20 pages. Ampco Metal Inc., 1743-47 S. 38th St., Milwaukee 46, Wis. IEN-01452

ALLOYS . . "Kentanium" heat-resistant titanium-carbide alloy; graphs and tables on properties, forms, uses. Bulletin 1051, 6 pages. Kennametal Inc., 100 Lloyd Ave., Latrobe, Pa. IEN-01453

BENDING . . "Metalworker" press brakes; capacities, dimensions, construction features, forming dies. Catalog 907, 12 pages. Airtherm Mfg. Co., 732 S. Spring Ave., St. Louis 10, Mo. IEN-01454

BOILERS . . Steam generators, 20 to 600 hhp; construction details, selection table. Catalog, 22 pages. Superior Combustion Industries Inc., 601 Times Tower, New York 18, N. Y. IEN-01455

CASTINGS . . In Meehanite alloy iron; picture examples of their scope, notes on properties. Bulletin 34, 4 pages. Meehanite Metal Corp., 802 Pershing Square Bldg., New Rochelle, N. Y. IEN-01456

CHUCKS . . Independent, self-centering, combination chucks in wrench-operated design, also face-plate and T-slot jaws; pneumatic chucks, operating cylinders, valves and accessories; suggestions on application and mounting. Facing pages picture each chuck, its spindle mounting, a drawing of the jaws, together with tables of dimensions and list prices. Catalog 63, letterhead request, 96 pages. Union Mfg. Co., 50 Church St., New Britain, Conn. IEN-01457

CLEANING . . "Wheelabrator" mechanical blast cleaning and shotpeening units; defense uses. Bulletin 794, 12 pages. American Wheelabrator, 553-57 S. Byrkit, Mishawaka, Ind. IEN-01458

CLEANING . . Dishwashing machine for laboratory glassware; operating description, data on two models. "Washer", 8 pages. Fisher Scientific Co., 719 Forbes St., Pittsburgh 19, Pa. IEN-01459

CLEANING . . Combination steam and pressure-spray machine for equipment cleaning; details on 5 models. Catalog 150, 4 pages. Maisbary Mfg. Co., 843-47 92nd Ave., Oakland 3, Calif. IEN-01460

CLEANING . . Vacuum and brush machines for floor cleaning; models, specifications, attachments. Bulletin, 6 pages. Multi-Clean Products Inc., 2281 Ford Parkway, St. Paul 1, Minn. IEN-01461

CLEANING . . "Rotoblast" machines to clean steel drums; descriptions, operating diagrams, safeguards. Bulletin 220, 6 pages. Pangborn Corp., 230 Pangborn Blvd., Hagerstown, Md. IEN-01462

COMMUNICATING . . Amplifiers, intercoms, plant broadcasting equipment; specifications, accessories. "Sound Systems", 20 pages. Bell Sound Systems, 553-57 Marion Rd., Columbus 7, Ohio IEN-01463

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 12864 If you write the maker

A PAID NEWS ADVERTISEMENT BY REMINGTON RAND INC.

THE NEW REMINGTON Electri-conomy TYPEWRITER

Booklet describes how Remington Electri-conomy slashes typing costs . . . increases production . . . meets every typing need for greater office efficiency.

Here is concrete information on how you can cut office typing costs and increase typing output anywhere from 10 to 50% by using the new Remington Electri-conomy Typewriter . . . the typewriter that turns out *more work, better work,* in *less time* and with *less effort.*

Based on actual testimonials and reports "The New Remington Electri-conomy Typewriter" contains illustrations and information of interest to executives in every business, large or small . . . and it's condensed into 4 pages for quick and easy reading. A copy of this booklet may be obtained by writing the publisher, Remington Rand, Room 2359, 315 Fourth Ave., New York 10, N. Y. or by using the Reader Service Form herein.

REMINGTON RAND INC.
Business Machines and Supplies Division, Room 2359
315 Fourth Ave., New York 10, N. Y.

BREVITY—Identify by IEN - 12865 If you write the maker

IT IS WISE TO TORIT-IZE

Once there was a business man,
Whose production was a bust,
Because from every grinding wheel,
There poured forth a stream of dust
His employees were leaving,
His production took a drop,
Until he called the Torit man,
And said this thing must stop.
Soon grinders were protected,
With Torit Dust Collectors,
The air was clear as crystal,
And there were no more objectors.
Each finished piece was gleaming,
Each surface bright and clean,
No clinging, abrasive dusts,
Could damage good machines.
This tale, it has a moral,
To follow if you're wise,
When dust becomes a problem,
It pays to Torit-ize.
P.S. If you want to know how Torit Dust Collectors can solve your dust problems, just drop us a line. Also ask for our latest catalog.

TORIT
MANUFACTURING CO.
286 Walnut St., St. Paul 2, Minn.

BREVITY—Identify by IEN - 12866 If you write the maker

CAPCO DOCK COVERS OFFER YEAR 'ROUND PROTECTION

Can be installed inside or outside of dock door . . . models for various purposes.

SOLD AT A LOW COST

. . . and the cost is especially low because it pays for itself many times . . . saves time and money over many years.

- PREVENTS ACCIDENTS
- ONE MAN CAN OPERATE
- FIREPROOF
- WATERPROOF
- DURABLE — LONG LIFE
- DEPENDABLE

BEAT THE BAD WEATHER

CAPCO Dock Covers completely enclose the space between car and building doorways, protecting loading and unloading during bad weather. Recommended by safety engineers. No more wet merchandise in the rain . . . no more interruption during winter. Here's your insurance against loss of either heat or refrigeration; you have practically the same as indoor loading.

CAPCO

Be sure to write for illustrated literature and prices.

622-24 PROSPECT AVENUE • KANSAS CITY 1, MISSOURI

▼ BREVITY—Identify by IEN - 12868 If you write the maker ▼

GOES A LONG WAY

to eliminate weld spatter cleanup

Unsightly costly weld spatter simply wipes off, in a matter of seconds, when you brush or spray Protect-O-Metal No. 2 in the weld seam on adjacent surfaces before welding. And you save up to 85% of weld cleaning labor, conserve man-hours for productive work.

Welders like Protect-O-Metal because it contains no organic materials, cannot cause smoke, fumes, or odors. *A little goes a long way* . . . costs 1/10¢ per foot of weld . . . saves up to three times its cost in time savings alone. Order a trial gallon ($3.25) on a no risk basis. If you're not completely satisfied we will cancel the invoice.

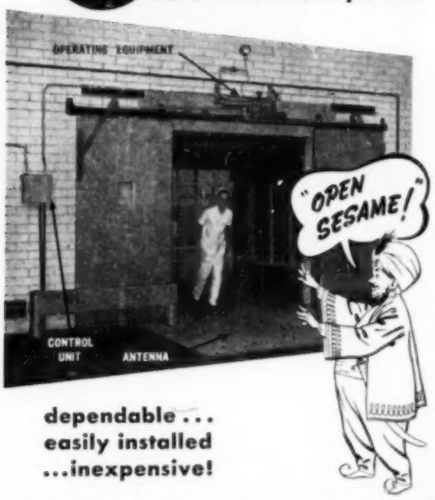
PROTECT-O-METAL POM

G. W. SMITH & SONS, INC. GWSMITH 5404 Kemp Rd., Dayton, O.

▼ BREVITY—Identify by IEN - 12869 If you write the maker ▼

here's the most modern — most efficient automatic door operator ever!

the NP "Electro-Field"* Automatic Door Operator



dependable . . . easily installed . . . inexpensive!

National Pneumatic's new "Electro-Field" Automatic Door Operator offers many important advantages over ordinary equipment, yet its cost is substantially less than even the conventional photoelectric type door operator.

The "Electro-Field" Automatic Door Operator employs a balanced high-frequency electrical system with a floor-installed antenna. Unbalancing of the electrical field by a person passing over the antenna actuates the operating equipment, thus opening the door. The door closes automatically after safe clearance, with no slamming. Timing is adjustable to individual requirements. Both opening and closing are performed by air pressure.

NP's "Electro-Field" controls all types of sliding, swinging or folding doors. It is pre-piped and pre-wired for easy installation. Doorways and approaches are kept perfectly clear, for no stanchions are used. The "Electro-Field" is precisely engineered and built. It stays in adjustment and gives long, trouble-free service.

Made by National Pneumatic Company, for nearly fifty years the principal supplier of door control equipment for railroads and transit systems, where dependability is of paramount importance. NP also makes a fully automatic *Photoelectric* Door Control, and two types of semiautomatic door controls — complete details will be forwarded on request. *Trade Mark

NATIONAL PNEUMATIC CO., INC.
125 Amory Street, Boston 19, Massachusetts
WORLD'S LARGEST MANUFACTURER OF DOOR CONTROL EQUIPMENT

NEW LITERATURE—Continued

"Alphabetical to help you check"

COMMUNICATING . . "Voicewriter" disc-type dictating machines; description and use. "Distinctly Yours", 12 pages. Thomas A. Edison Inc., 49-53 Lakeside Ave., West Orange, N. J. **IEN-01464**

COMPRESSORS . . Rotary units and vacuum pumps; sectional view, operating principle, picture examples of use. Bulletin C-6, 4 pages. Fuller Co., 1950 Fuller Bldg., Catasauqua, Pa. **IEN-01465**

CONDUIT . . Flexible metal electrical conduit with synthetic jacket; data on ⅜ to 2-in. sizes. Bulletin C-201, 4 pages. American Metal Hose, 696-700 S. Main St., Waterbury 20, Conn. **IEN-01466**

CONNECTORS . . Screw-type barrier terminal blocks; models, dimensions, list prices. "Terminal Blocks", 12 pages. Kulka Electric Mfg. Co., 631-35 S. Fulton, Mount Vernon, N. Y. **IEN-01467**

CONNECTORS . . Solderless, No. 14 to 2,000,000 c.m. conductors; drawings, data. Bulletin 66, letterhead request, 56 pages. Thomas & Betts Co., 60-A Butler St., Elizabeth 1, N. J. **IEN-01468**

CONTRACT WORK . . In stampings, welded parts, pressed shapes; production facilities, examples. "Enlist Brandt", 4 pages. Charles T. Brandt, 1732 Ridgely, Baltimore 30, Md. **IEN-01469**

CONTRACT WORK . . By maker of packaging and bakery machinery; war products, facilities. "Background for Service", 8 pages. Peters Machinery Co., 4702 Ravenswood, Chicago 40, Ill. **IEN-01470**

CONTROLS . . Pneumatic transmitter for pressure differential; operation diagram, application drawings. Bulletin 2551, 8 pages. Hagan Corp., P. O. Box 1346-A, Pittsburgh 30, Pa. **IEN-01471**

CONTROLS . . "Electr-O-Vane" recording control instruments; principle, construction, models. Catalog 8000, 16 pages. Brown Instruments Div., 4456 Wayne Ave., Philadelphia 44, Pa. **IEN-01472**

CONVEYING . . Coal and ash-handling equipment for power plants; descriptions, suggested layouts, examples. Book 2410, 44 pages. Link-Belt, 305-9 N. Michigan, Chicago 1, Ill. **IEN-01473**

CONVEYORS . . Gravity and power conveyors, hand trucks; standard units, accessories, layouts. Catalog GC-52, 28 pages. Rapids-Standard Co., Grand Rapids 2, Mich. **IEN-01474**

COOLING . . "Aero" heat exchanger to cool lubricating oil, compressed air, process fluids; operation, uses. Bulletin 120, 4 pages. Niagara Blower Co., 3117 Chrysler, New York 17, N. Y. **IEN-01475**

CORROSION PROOFING . . "Tectyl" rust-preventive materials; types, properties, application and removal. Booklet 2048-B, 16 pages. Freedom-Valvoline Oil Co., 51 Thomas St., Freedom, Pa. **IEN-01476**

CORROSION PROOFING . . Phosphate-chromate primer for rusted surfaces before painting; description. "Ospho", 4 pages. Rustiefde, 3123-27 Perkins Ave., Cleveland 14, Ohio **IEN-01477**

COUNTING . . Stroke, revolution, magnetic, lineal, predetermined English counters; condensed specifications. Catalog, 14 sheets. Trumeter Co., 1265 Broadway, Room 406, New York 1, N. Y. **IEN-01478**

DOORS . . "Barcol" overhead rolling doors and electric operators; models, installation layouts, controls. Bulletin F-1406-11, 16 pages. Barber-Colman Co., 1312-16 Rock St., Rockford, Ill. **IEN-01479**

DRILLING . . Multiple-spindle, angle heads, tapping heads, chip breaker, drill table; specifications. Catalog 851, 12 pages. Commander Mfg. Co., 4221 W. Kinzie St., Chicago 24, Ill. **IEN-01480**

DRILLING . . "Hi-Eff" sensitive drilling machines to ⅝ in.; specification tables. Bulletin 181, 4 pages. Taylor Dynamometer & Machine Co., 526-30 W. Highland Ave., Milwaukee 3, Wis. **IEN-01481**

DRIVES . . "Morflex" coupling and driveshaft assemblies; speeds, dimensions on radial and universal types. Catalog F-41-51, 4 pages. Morse Chain Co., 7603 Central Ave., Detroit 8, Mich. **IEN-01482**

DRIVES . . "Gripmaster" centrifugal clutch; description, dimensions, selection data for 34 engines. Form SAC-400A, 3 sheets. Salsbury Corp., 1159-63 E. Florence, Los Angeles 1, Calif. **IEN-01483**

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 12871 If you write the maker ▼

ALLIGATOR®

CONVEYOR BELT LACING

Every Tooth A Vise*

in Long Continuous Lengths for Conveyor Belts . . . . .

★ Excellent for Package Conveyors, Portable Loaders, Trenching and Ditching Machines, etc.
★ In canneries where corrosion or rust is a problem specify Alligator made of Monel.
★ For magnetic separators or anti-sparking specify Alligator made of Everdur.
★ Separable and smooth on both sides.
★ 12 sizes. For belts from 1/16" to 5/8" thick—and *any width*.

Order from Your Supply House. Ask for Bulletin A-60.

FLEXIBLE STEEL LACING CO. 4610 Lexington St., Chicago 44, Ill.

JUST A HAMMER TO APPLY IT

▼ BREVITY—Identify by IEN - 12872 If you write the maker ▼

ARE LITTLE LEAKS CAUSING YOU BIG LOSSES?

No. 304-N Sylphon Packless Valve comes in sizes from ½" to 2" for pressures up to 150 lbs. Also available in larger sizes is No. 1304 with flanged connections for liquid pressures up to 80 lbs. No. 304-NV is ideal for vacuum service.

Stop them with SYLPHON PACKLESS VALVES

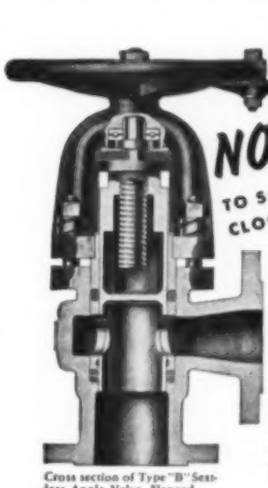
● Costly leaks of valuable liquids or gases can be *stopped for good* . . . with Fulton Sylphon Packless Valves. They prevent waste—provide vacuum protection—help your equipment operate more efficiently and economically.

A dual-ply, seamless Sylphon metal bellows replaces customary packing . . . provides a positive seal. Many sizes and types, with body made of brass, bronze, cast iron, cast steel, stainless steel or monel.

Widely used in the processing industries—chemical plants, oil refineries; also in power plants, aboard ships. Ideal for standard equipment. Write for Bulletin XN-813.

FULTON SYLPHON DIVISION
ROBERTSHAW-FULTON CONTROLS CO. • • KNOXVILLE 4, TENN.
Temperature Controls • Bellows Devices • Bellows Assemblies
Canadian Representatives, Darling Brothers, Montreal

▼ BREVITY—Identify by IEN - 12873 If you write the maker ▼



NO SEAT!

TO SCORE . . . WEAR . . . CLOG . . . AND LEAK

The Yarway Seatless Blow-Off Valves eliminate the commonest source of trouble and expense with ordinary blow-off valve operations.

The famous seatless principle first introduced nearly 40 years ago, has been constantly improved and adapted to meet modern service requirements.

There is a Yarway Blow-Off Valve for every pressure.

SEND FOR FREE BLOW-OFF VALVE BOOKLET. PLEASE STATE YOUR BOILER PRESSURES.

Cross section of Type "B" Seatless Angle Valve, Flanged.

YARNALL-WARING COMPANY
122 Mermaid Ave., Phila. 18, Pa.

YARWAY BLOW-OFF VALVES

▼ BREVITY—Identify by IEN - 12874 If you write the maker ▼

BIG BENEFITS WITH Curvacore TRANSFORMERS

HERE'S WHY new *Curvacore* transformers give you more for your distribution dollar:

- Exciting current is 50% lower. Wound core with cold-rolled preferred oriented steel provides the same magnetization with less current.
- Ratio of losses is improved. New coil design gives better balance of core steel to copper.
- Thermal capacity is increased. New insulation and generous ventilating ducts provide a more efficient cooling system.
- Regulation is improved up to 15%, because impedance is lower.
- Size and weight are reduced by 15%.

Take advantage of these benefits by installing *Curvacore* transformers on your distribution system. For more information contact your local A-C sales office or write for Bulletin 61B7641. Allis-Chalmers, Milwaukee 1, Wisconsin. A-3491

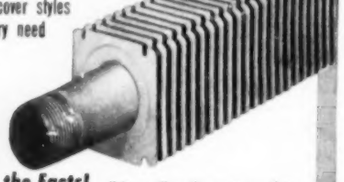
Curvacore is an Allis-Chalmers trademark.

ALLIS-CHALMERS A-C

BREVITY—Identify by IEN - 12875 if you write the maker

KRITZER Commercial "FIN PIPE" COILS

- For truly modern heating at lowest cost
- No guesswork about selection
- Installation is simple as ABC
- Sizes, cover styles for every need



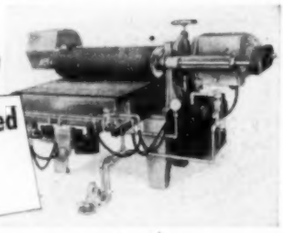
Get the Facts! — Kritzer offers the most complete and authoritative data on finned-pipe heating in the industry. Write for Engineering Manual 50-CE.

KRITZER RADIANT COILS, INC.
2901 W. Lawrence Ave., Chicago 25, Ill.

If it's Kritzer, it's right, Sir!!

BREVITY—Identify by IEN - 12876 if you write the maker

Precision for improved surface finishing



CLAIR SURFACE FINISHING MACHINES

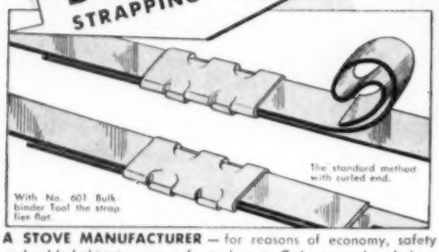
With adjustable, abrasion-proof hydraulic controls permitting rapid change of variables, these machines assure quality surface finishing on a production basis. With magnetic or vacuum chuck, Clair Machines are custom-built to solve your surface finishing problem.

For efficiency in surface finishing products like these:
Screw Drivers
Chisels • Pliers
Saws • Wrenches
Compacts • Fan Blades
Cigarette Cases
Fine Silver
Surgical Instruments
Flat Iron Sole Plates

CLAIR MANUFACTURING CO., INC.
Specialized Machine Equipment For Glazing and Polishing Operations
OLEAN, N. Y.

BREVITY—Identify by IEN - 12877 if you write the maker

DO YOU HAVE A "DIFFERENT" STRAPPING PROBLEM?



A STOVE MANUFACTURER — for reasons of economy, safety and added shipping space formerly cut off the unused curled up portion of steel strapping by hand. He now uses an A. J. Gerrard No. 601 Bulkbinder tool with a built-in cutter which eliminates this operation.

Your "problem" can be easily solved. Call or write A. J. Gerrard & Co.

Strap calculator. Write for your free copy.

G-1 STEEL STRAPPING

Saves Shipping Space . . . No Occupational Hazard . . . No Waste of Time.

A. J. Gerrard & Co.
1980 HAWTHORNE BLVD. MELROSE PARK, ILL.
(Chicago Suburb)

NEW LITERATURE—Continued

"Addresses so you can write direct"

DRYING . . Oven application example to the baking of television tubes. "Another First", 6 pages. J. O. Ross Engineering Corp., 444 Madison Ave., Rm. 1802, New York 17, N. Y. IEN-01484

DUST COLLECTING . . Cyclone, electrostatic, other equipment; descriptions, selection factors, uses. Catalog 101, 28 pages. Buell Engineering Co., 70 Pine St., 50th Flr., New York 5, N. Y. IEN-01485

ELECTRONIC PRODUCTS . . Tubes, components, test units, tools, sound equipment; descriptions, list prices. Catalog 52, 192 pages. Radio Shack, 165-69 Washington, Boston 8, Mass. IEN-01486

FASTENINGS . . "Holtite" screws mounted on tape for product use; notes on arrangements. Pocket folder, "Taped Screws", 6 pages. Continental Screw Co., New Bedford, Mass. IEN-01487

FILTERING . . Equipment to remove abrasives, chips, dirt from coolant to 1,000 gpm.; operating cycle. "Automatic Clarifier", 4 pages. Honan-Crane, 510 Indianapolis, Lebanon, Ind. IEN-01488

FILTERING . . Sump-type liquid filters, 5 to 50 gpm.; cut-away view, models, ratings, line types. Folder 105, 8 pages. Marvel Engineering Co., 623-27 W. Jackson Blvd., Chicago 6, Ill. IEN-01489

FLOORS . . Greaseproof floor tile for plant, kitchen, lunchroom use; description, color samples. "Tuff-Tex", 4 pages. Tile-Tex Div., 1230-34 McKinley Ave., Chicago Heights, Ill. IEN-01490

FOUNDRIES . . Equipment for molding, ramming and conditioning foundry sand; condensed review. "Better Methods . .", 4 pages. Beardsley & Piper, 2422-26 N. Cicero Ave., Chicago 39, Ill. IEN-01491

GAGES . . "Truscale" remote-reading liquid-level gages; schematic operating diagram, models, ranges. Bulletin 176, 8 pages. Jerguson Gage, 80-87 Fellsway, Somerville 45, Mass. IEN-01492

GAGES . . Optical comparators for work inspection; operating schematic, models, accessories, uses. Catalog 402, 36 pages. Jones & Lamson Machine Co., 12 Bennett St., Springfield, Vt. IEN-01493

GAGES . . Steel tape rules and wood folding rules in a range of models; types, markings, list prices. 1951 Catalog, 5 sheets. Master Rule Mfg. Co., 38-42 Mulberry St., Middletown, N. Y. IEN-01494

GAGES . . Water columns, level gages, signals, illuminators; operation, accessories, list prices. Bulletin WG-1811, 20 pages. Yarnall-Waring Co., 122 Mermaid Lane, Philadelphia 18, Pa. IEN-01495

GEAR CUTTING . . "Certified" unground hobs; description, field tolerance tables, scope of application. Booklet AD-16, 16 pages. Illinois Tool Works, 2503 N. Keeler Ave., Chicago 39, Ill. IEN-01496

GENERATORS . . Motor and engine-generator sets for 400-cycle service; sizes, ratings, wave analysis. Bulletin 440, 8 pages. Bogue Electric Mfg. Co., 45 Iowa Ave., Paterson 3, N. J. IEN-01497

GENERATORS . . Engine-generator sets to charge lifting magnets; data on models from 5 to 25 kw. rating. Bulletin 264-2, 4 pages. Ready-Power Co., 11229-33 Freud Ave., Detroit 14, Mich. IEN-01498

GRINDING . . Wheels, discs, mounted points, cutting discs, accessories; sizes, uses, list prices. Catalog, 28 pages. Bay State Abrasive Products Co., 10-14 Union St., Westboro, Mass. IEN-01499

GRINDING . . Portable pneumatic tools; models, accessories, suggestions on selection and application. Bulletin KT-6375, 16 pages. Keller Tool Co., 1948 Parks St., Grand Haven, Mich. IEN-01500

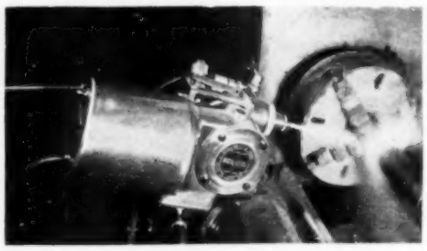
GRINDING . . Traveling-table machines for face, knife grinding; models and specifications. Bulletin 846-2RM, 8 pages. Mattison Machine Works, 543-47 Blackhawk Park Ave., Rockford, Ill. IEN-01501

GRINDING . . "Acme" machine to gum and sharpen circular saw blades; specifications, illustrated attachments. Folder C88-51, 4 pages. Max Mfg., 136-40 Stockton, San Jose 11, Calif. IEN-01502

HANDLING . . Eccentric-shackle lifting clamps and grabs for heavy sheet; data on models to 20 ton. Bulletin 900, 8 pages. J. C. Renfroe & Sons, 1257-61 W. State, Jacksonville 1, Fla. IEN-01503

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 12878 if you write the maker



Rebuild Worn Parts by Metallizing

Save time, money and critical parts by Metallizing with new Moguletric Gun. Adds metal to metal with fine atomization for perfect bond. Simplified, easy to use, engineered to give trouble-free service.

Also ideal for spraying corrosion-resistant metal coatings and for production work.

If you already have metallizing equipment, why not consider a trade-in now for the new Moguletric Gun.

Write for new booklet containing complete information on equipment as well as production and maintenance applications.

METALLIZING COMPANY OF AMERICA
3520 W. Carroll Avenue • Chicago 24, Ill.

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As a Man Bends, So Bends the LAWLOR

The adjustable handle makes it possible to scrub and wax polish in congested places where hand cleaning was necessary before — around and under machines, counters, desks, lockers, etc.

Operator can raise or lower handle to any angle within an 80 degree arch and shove the Lawlor under anything where there is at least a 9½" opening and as far back as 4½ feet. Three models — a size to suit every need.

Write for literature on adjustable handle models and other Lawlor units.

There's a complete line of Lawlor Floor Maintenance Equipment—scrubbers, wax polishers, mopping tanks, mop wringers.

S. C. LAWLOR CO.
Quality Floor Equipment for 50 years
120 N. ABERDEEN ST., CHICAGO 7, ILL.

BREVITY—Identify by IEN - 12880 if you write the maker

MERCOID AUTOMATIC CONTROLS

THEY ARE USED FOR THE CONTROL OF TEMPERATURE, PRESSURE, LIQUID LEVEL AND MECHANICAL OPERATIONS.

THE MERCURY SWITCH IS A FEATURE IN MERCOID CONTROLS. THE REASON FOR THE MERCURY SWITCH IS THE ADDED SAFETY, BETTER PERFORMANCE AND LONGER CONTROL LIFE—ALL OF WHICH ARE IMPORTANT WHEREVER CONTROLS ARE REQUIRED. WHY CONSIDER LESS WHEN YOU CAN GET SO MUCH MORE

WRITE FOR COMPLETE CATALOG

THE MERCOID CORPORATION D 4201 BELMONT AVE., CHICAGO 41, ILL.

BREVITY—Identify by IEN - 12881 if you write the maker

Wilsonize TO ECONOMIZE

Yes, tube maintenance problems are cut down to size . . . *and* savings start to rise . . . when you Wilsonize your tube cleaning and expanding equipment. That's because powerful, fast-acting Wilson Tube Cleaners assure more thorough, quicker removal of deposits from curved or straight tubes. Parallel rolling Wilson Tube Expanders give you tighter joints, eliminate the need for frequent re-rolling.

Wilsonizing means equipment goes back on the line faster, production stays in high gear, maintenance costs are radically reduced. Send for 48-page Bulletin on complete Wilson Tube Cleaner line and for Tube Expander Catalog. A single request brings both.

THOMAS C. WILSON, INC.
21-11 44th AVENUE, LONG ISLAND CITY 1, N. Y.

WILSON
WILSON TUBE CLEANERS • WILSON TUBE EXPANDERS

▼ BREVITY—Identify by IEN - 12882 If you write the maker ◁▼

Forget Metal Shortages!

SWITCH TO PLASTIC DIALS

precision-fabricated by SILLCOCKS-MILLER

Don't let metal shortages slow up production. Sillcocks-Miller engineers have the practical answer for you in dials of all types fabricated from plastic.

No matter what your dial requirements may be, it will pay you to consult Sillcocks-Miller. Their experience, facilities and precision techniques will help you solve present metal shortage problems.

Write for samples and quotations.

The SILLCOCKS-MILLER Company

Pioneers in Plastic Fabrication since 1910

27 W. Parker Ave., Maplewood N. J.

▼ BREVITY—Identify by IEN - 12883 If you write the maker ◁▼

What's U. S. Rubber doing to cut finishing time?

This workman "finishing" the bead of a weld reports that his "U.S." Cup Wheel cuts finishing time in half.

"U.S." maintains engineering staffs which are constantly working with industry to develop more economical and efficient grinding wheels. These experts are backed by over 88 years of "U. S." experience in bonds and abrasives. Bring your problems to them.

PRODUCTS OF U.S. RUBBER SERVING THROUGH SCIENCE

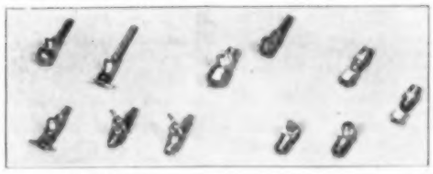
UNITED STATES RUBBER COMPANY

MECHANICAL GOODS DIVISION, ROCKEFELLER CENTER, NEW YORK 20, N. Y.

▼ BREVITY—Identify by IEN - 12885 If you write the maker ◁▼

VALVES . . Zinc plated steel, fittings, 1/8 in. pipe, 3/16 in. tube

Source: DEXTER AUTOMATIC PRODUCTS CO.
51 Tupper Bldg., Dexter, Mich.



Threaded, flare or compression connections

Threaded stems equipped with stuffing boxes and threaded connections for 1/4-in. pipe or 3/16-in. tube and combinations of the two are included in the company's new line of zinc-plated steel valves and fittings for lines handling pressure to 10 pounds. Strainers with Monel or brass-wire cloth also are available in 60 to 120 mesh. The valve is designed for use with gasoline, alcohol, light oil, special liquids. It can be supplied in the stock units shown or in special designs.

▼ BREVITY—Identify by IEN - 12886 If you write the maker ◁▼

CONVEYING . . Neoprene-fabric belt for food products, width to 48 inches

Source: BALDWIN BELTING INC.
76 Murray St., New York 7, N. Y.

Can be cleaned in operating position

Supertex trade names a new belt made of multiple plies of lightweight duck, neoprene impregnated, cured and covered with neoprene in 0.010 in. "standard" thickness and in 3/64 in. "heavy" thickness. Three or five plies are employed respectively in the two designs. Recommended load is 48 and 80 lb. per inch of width. Minimum pulley diameter over which the belt will ride satisfactorily is 1 in. and 1½ inch.

The belt is odorless, tasteless, non-toxic. It is washable, oilproof, waterproof and resistant to attack by acids, alkalies and heat to 250 deg. F. The fabric laminations are full width. The belt can be made endless by means of its vulcanized multiple step lap. It also can be laced in customary manner.

▼ BREVITY—Identify by IEN - 12887 If you write the maker ◁▼

FASTENING . . Flange locknut now available in 1/4 in. size

Source: KAYNAR MFG. CO.
818 E. 16th St., Los Angeles 21, Calif.

Spring steel

New locknut is made with an integral flange to serve as an anchor. It is threaded and then the threaded portion is deformed, prior to heat treating, so the final unit presents a stud-gripping thread. The unit is available in solid, floating and gang channel design in 1/4-in. size at present. The company is working on additional sizes in a range from No. 8 to 5/8 inch.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 12888 If you write the maker ◁▼

MEMO:

BILL:—

ACME ELECTRIC HAVE A NEW CATALOG GIVING A LOT OF USEFUL IDEAS ON THE APPLICATION OF DRY TYPE TRANSFORMERS "HOW TO ELIMINATE DOUBLE-WIRING SYSTEMS; DISTRIBUTE POWER AT HIGH VOLTAGE; PROVIDE 3-WIRE CIRCUITS; BOOST AND BALANCE VOLTAGE."

WRITE FOR BULLETIN AC185. TO ACME ELECTRIC CORP. 2612 WATER ST; CUBA, N.Y.

▼ BREVITY—Identify by IEN - 12889 If you write the maker ◁▼

ENGRAVING • PROFILING VERTICAL MILLING WITH THE Engravograph

TRACER-GUIDED FOR UNSKILLED LABOR

CAMS DIES DIALS PANELS

Write for literature describing:

1. Heavy Duty Engravograph (illustrated) (catalog M-2)
2. Portable Engravograph — Catalog (M-3)

NEW HERMES, Inc. 13-19 University Place New York 3, N.Y.

CANADA: 359 St. James St., Montreal

World's Largest Manufacturer of Portable Engraving Machines

▼ BREVITY—Identify by IEN - 12890 If you write the maker ◁▼

Fans . . Blowers

FOR ALL INDUSTRY

"Standard Units or Custom Design"

DOUBLE SWIVEL AEROSPOT

For column or wall mounting. Saves valuable floor space. Direction of blast adjustable: 360° around Spindle Axis, 90° around Motor Support Axis. Sizes, 20" to 36".

Fans and blowers in a wide range of standard size units are available for specific air moving and ventilating requirements. Special custom designed equipment can also be furnished. Our staff of engineers is at your disposal for competent advice on any ventilating problem. Correspondence invited, without obligation.

SEND FOR CATALOG TODAY!

6 Blade DYNAFLOW Unit

Also available in two and four blade types. Sizes, 16" to 36".

DUCTYPE BLOWER

Direct driven, single or tandem fan units. Also available with belt drive. Sizes, 16" to 36".

SOUTH BEND AIR PRODUCTS, Inc. 307 E. COLFAX AVE. SOUTH BEND, IND.

▼ BREVITY—Identify by IEN - 12891 If you write the maker ◁▼

A 6000-LB. LIFT! at a touch of Suzy's featherlight fingertips!

Yes, *Fingertip Control* on the new Revolvator Go-Getter enables anyone to pick up a wacking big lift-and-carry load. *Anyone!*

Think what this means in the face of rapidly increasing work-costs; in terms of reducing occupational-accident hazards. You don't need skilled labor — husky muscle-men—to operate Fingertip Control Revolvators.

This control feature and many more are *exclusive* with the Revolvator Go-Getter electrically-operated pallet-type truck, which hydraulically lifts a full four inches in four seconds. It lowers loads just as gently . . . smoothly . . . quietly as it lifts. Positively braked with deadman safety control. Comparable, practically, to the way little Suzy handles her doll carriage, but a whole lot surer and faster.

REVOLVATOR GO-GETTER

Smoothly turns with no steering push-and-pull, up to a full 200° arc, within its own length. 2 and 3-ton models.

REVOLVATOR CO.

Designers and Manufacturers of Materials Handling Equipment Since 1904

Revolvator Co.
8750 Tonnelle Ave., N. Bergen, N. J.
Gentlemen:
We want to know, without obligation, about Revolvator Go-Getter *Fingertip* Control Lift Trucks
Name
Position
Company
Address

BREVITY—Identify by IEN - 12892 If you write the maker

Put WILLIAMS-HAGER FLANGED Silent CHECK VALVES into the picture—

and your WATER HAMMER WORRIES ARE OVER

When you install Williams-Hager flanged Silent Check Valves in your water system, you complete the happy picture of a plant . . . rid of costly water hammer. These dependable valves provide positive protection in any position including angular, horizontal and vertical with flow either upward or downward. Disc and seat are renewable—conical spring is non-wearing. Easy to install or reseat, they are available in standard pipe sizes from 1" to 20".

Write today for Bulletin WH-100.

THE WILLIAMS GAUGE CO.

Pump Valves . . . Water Gauges . . . Gauge Cocks . . . Steam Traps . . . Pump Governors . . . Feed Water Regulators . . . Water Columns

2900 PENNSYLVANIA AVE. • PITTSBURGH 33, PA.

BREVITY—Identify by IEN - 12893 If you write the maker

Here's BIG NEWS on Blast Cleaning Dust Control Precision Finishing

Blast Cleaning Unit is PORTABLE! Hydro-Finish SPEEDS POLISHING!

Ideal for maintenance and many other jobs, including removal of rust, dirt, scale, etc. Economically cleans large objects like tanks, bridges, structural work before painting. Six sizes, stationary or portable, from $170.00 and up.

Removes scale and directional grinding lines . . . prepares surfaces for plating and holds tolerances to .0001"! Liquid blast reduces costly hand cleaning and finishing of molds, dies, tools, etc. Models from $1295.00 and up.

STOP DUST at the SOURCE! COMPACT Blast Cabinet for SMALL WORK!

Pangborn industrial type Unit Dust Collectors trap dust at source. Machine wear is minimized, housekeeping and maintenance costs reduced. Solves many grinding and polishing nuisances and material losses. Models from $286.00 up.

Ideal for producing clean, smooth surfaces on pieces up to 60" x 36" in size. Cleans metal parts, removes rust, scale, grime, dirt, paint, etc., in a few seconds. Saves money all year 'round. Models from $315.00 and up.

Look to Pangborn for the latest developments in Blast Cleaning and Dust Control Equipment

Pangborn MAIL COUPON FOR DETAILS

Check for more information
- Blast Cleaning Cabinets
- Blast Cleaning Machines
- Unit Dust Collectors
- Hydro-Finish Cabinets

PANGBORN CORP., 2300 Pangborn Blvd., Hagerstown, Md.

Gentlemen: Please send me more information on the equipment I've checked at the left.

Name.....

Company.....

Address.....

City.....Zone....State.....

NEW LITERATURE—Continued

"Number of pages tells you the size"

HANDLING . . Pallets with welded steel wire platforms; data on two models rating 4,000 and 6,000 pounds. "Wire Pallets", 2 pages. Union Steel Products Co., 405 Pine St., Albion, Mich. **IEN-01504**

HARD FACING . . Welding rod and electrodes; data on five types. Folders 320, 321, 322, 323, 324, 4 pages each. Victor Equipment Co., 11318-22 S. Alameda, Los Angeles 59, Calif. **IEN-01505**

HEAT TREATING . . Baskets, crates, racks, trays of fabricated alloys for work handling; picture examples. Catalog B-8, 24 pages. Rolock Inc., 1348-52 Kings Highway, Fairfield, Conn. **IEN-01506**

HEATING . . Air-gas torches for heating, soldering, brazing; air and gas consumption tables. Bulletin 610, 4 pages. American Gas Furnace Co., 138 Spring St., Elizabeth B, N. J. **IEN-01507**

HEATING . . Electronic-type 20-kw. induction heater; condensed specifications, illustrated construction. Bulletin GEA-5594, 4 pages. General Electric Co., Dept. 6X201, Schenectady 5, N. Y. **IEN-01508**

HEATING . . Burners and torches for gas-air and oxygen-gas-hydrogen, vacuum pumps; catalog data. Bulletin 11-K, 40 pages. Research Supply, 3432-36 W. Montrose, Chicago 18, Ill. **IEN-01509**

HEATING . . Gas-fired radiant heat equipment for product processing; scope and examples. "Heat Processing", 4 pages. Selas Corp. of America, 551 E. Erie Ave., Philadelphia 34, Pa. **IEN-01510**

HOSE . . Flexible metal hose and metal bellows; sizes fittings, pressures, selection data. Catalog 123, letterhead request, 16 pages. Chicago Metal Hose Corp., 1316 S. 3rd St., Maywood, Ill. **IEN-01511**

HOSE . . Hydraulic hose and fittings and a machine to assemble them; description, sizes, instructions. "Hose Manual No. 8", 8 pages. Pyles Industries, 8924-28 Second Ave., Detroit 2, Mich. **IEN-01512**

INSULATING . . "Macallen" manufactured mica products; data on sheet, plate, tube, tape. Bulletin 527-A, 20 pages. Insulation Mfrs. Corp., 563-67 W. Washington Blvd., Chicago 6, Ill. **IEN-01513**

INSULATING . . Cork pipe covering, roof and cold-storage insulation; properties, sizes, installation. "Cork Products", 12 pages. Mundet Cork Corp., 7103 Tonnelle, North Bergen, N. J. **IEN-01514**

JACKS . . Ratchet and hydraulic jacks for oil-field use; review of available models with specifications. Folder AD-19, 4 pages. Duff-Norton, 2707-11 Preble, Pittsburgh 30, Pa. **IEN-01515**

LAYOUT . . Large surface plates, engine stands, dynamometer bases; illustrated examples. Catalog D-251, 4 pages. Lake Shore Engineering, 51 Lake Shore, Iron Mountain, Mich. **IEN-01516**

LAYOUT . . Scale models for three-dimensional plant layout; list of 6,000 stock items, examples. Catalog, 80 pages. Visual Planning Equipment, Penna. Ave. & River Rd., Oakmont, Pa. **IEN-01517**

LIGHTING . . Series sequence ballast for two 96T12 fluorescent lamps in series; description, wiring diagram. Bulletin 551-11, 2 pages. Jefferson Electric, 825 - 25th Ave., Bellwood, Ill. **IEN-01518**

LUBRICATING . . "Dag" colloidal graphite; notes on its use as a parting compound in molds, dies. Folder 427, 6 pages. Acheson Colloids Corp., 2000 Washington Ave., Port Huron, Mich. **IEN-01519**

LUBRICATING . . "Molykote" molybdenum-disulfide materials; types, properties, application examples in service. Bulletin 93, 8 pages. Alpha Corp., 177 Hamilton, Greenwich, Conn. **IEN-01520**

LUBRICATING . . Graphite-content dry lubricant in stick form; application suggestions. Folder, "Graf-Bar", 6 pages. Enterprise Products Co., 280-84 Union Ave., Williamsport 12, Pa. **IEN-01521**

LUBRICATING . . Oils, greases, cutting oils, rust preventives; reference list. "Government Specification Products", 8 pages. E. F. Houghton & Co., 301-5 W. Lehigh, Philadelphia 33, Pa. **IEN-01522**

LUBRICATING . . Wax-emulsion materials for drawing and forming metal; application data, examples. "Wax Lubricants", 12 sheets. S. C. Johnson, 1523-27 Howe, Racine, Wis. **IEN-01523**

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BREVITY—Identify by IEN - 12895 If you write the maker

A PAID NEWS ADVERTISEMENT BY THE SCHATZ MANUFACTURING CO.

New Double Row Ball Bearing Rollers Replace Precision Bearings

Manufacturers who want to cut costs without sacrificing anti-friction efficiency will be interested in the new type KR and KRS ball bearing rollers made by the Schatz Manufacturing Co.

These bearings are designed to replace expensive precision bearings when extremely heavy loads and high speeds are not present. Their cost is often less than that of bushings or plain sleeve bearings—since costly machining and assembly time is eliminated. They can handle loads too heavy for single row bearings in space too small for two separate rows.

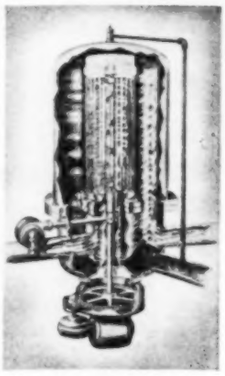
All parts are machined from solid bar stock—carburized, hardened and tempered. Balls are of highly polished, hardened steel. Modifications in the outer ring can be made for specific requirements.

Schatz is offering its new Catalog No. 11, which gives complete information on all "Commercial" ball bearings and the Schatz Special Bearing Engineering Service, to companies requesting it.

THE SCHATZ MANUFACTURING COMPANY
6750 Fairview Avenue, Poughkeepsie, N. Y.

BREVITY—Identify by IEN - 12896 If you write the maker

Save Water...Cut Bills with this strainer



Make raw river or lake water fit for industrial use by passing it through a Cuno FLO-KLEAN.

FLO-KLEAN strains out trash at flow rates up to 20,000 gpm. No attention needed—with continuous backwash cleaning* of the strainer and automatic top and bottom blow-down.

Reclaim used process water with FLO-KLEAN—save water bills and heating costs.

Write for FLO-KLEAN bulletin—see how FLO-KLEANS have paid for themselves in as short a time as six months. Cuno Engineering Corporation, Dept. 693F, South Vine Street, Meriden, Connecticut.

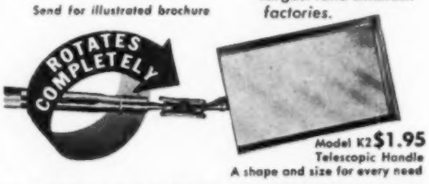
*Even the backwash water is reclaimed—not a drop wasted!

CUNO Fluid Conditioning
Removes More Sizes of Solids from More Types of Fluids

BREVITY—Identify by IEN - 12897 If you write the maker

What he needs is W.I.M.* *Work Inspection Mirrors by Ullman have 1001 time-saving, money-saving uses in America's largest (and smallest) factories.

Send for illustrated brochure



Model K2 $1.95
Telescopic Handle
A shape and size for every need

ULLMAN PRODUCTS CORPORATION
ULLMAN BUILDING, DEPT. N • BROOKLYN 15, N.Y

BREVITY—Identify by IEN - 12898 If you write the maker

THE RAYONIC® CATHODE RAY TUBES BY WATERMAN

3SP

Maximum 2nd anode voltage 2750 volts. Satisfactory operation can be achieved at 600 volts. Vertical deflection factor 52 to 70 volts DC per inch per kilovolt. Horizontal deflection factor 73 to 99 volts DC per inch per kilovolt. Grid cut-off voltage 2.5 to 6.7% of 2nd anode potential. Focusing voltage 16.5 to 31% of 2nd anode voltage. Heater 6.3V at .6 amp. Twelve pin small shell duodecal base. Tube can be mounted in any position. 3SP1 JAN approved.

Since the introduction of Waterman RAYONIC 3MP1 Tube for miniaturized Oscilloscopes, Waterman has developed a rectangular Tube for multi-trace oscilloscopy. Identified as the Waterman RAYONIC 3SP, it is available in P1, P2, P7 and P11 screen phosphors. The face of the Tube is 1½" x 3" and the over-all length is 9⅛". Its unique design permits two 3SP Tubes to occupy the same space as a single 3" round tube, a feature which is utilized in the 5-15-A TWIN-TUBE POCKETSCOPE. On a standard 19" relay rack, it is possible to mount up to ten 3SP tubes with sufficient clearances for rack requirements. Thus 3SP RAYONIC tube is ideal for multitrace oscilloscope work.

WATERMAN PRODUCTS CO., INC. PHILADELPHIA 25, PA. CABLE ADDRESS: POKETSCOPE

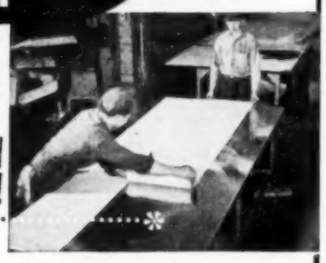
WATERMAN PRODUCTS INCLUDE:
3JP1 & 3JP7 JAN RAYONIC CR TUBES
3JP2 & 3JP11 RAYONIC CR TUBES
3MP7 & 3MP11 RAYONIC CR TUBES
3RP1, 2, 7, 11 RAYONIC CR TUBES

Also POCKETSCOPES, PULSESCOPES, RAKSCOPES and other equipment

WATERMAN PRODUCTS

▼ BREVITY—Identify by IEN - 12899 If you write the maker ▼

Mystik Protecto-Mask



SAVE that polished surface!

Here's sure protection for those expensive, highly polished surfaces – stainless steel, aluminum, plastics, many more!

• Keep them protected during *fabrication, storage, in shipment.* • MYSTIK Protecto-Mask is *Self-Stik* . . . goes on easily from the roll to surface, peels off easily. Leaves no residue. • Protects against scratches, and production damage . . . cushions blows . . . shields against splatter from welding arc. Can be used for layout and diagramming.

Ask your supplier or write for full information and sample. Mystik Adhesive Products, 2644 N. Kildare, Chicago 39.

▼ BREVITY—Identify by IEN - 12900 If you write the maker ▼

Simpson

multi-purpose MICROTESTERS STAY ACCURATE!

These instruments are 3"x5⅞"x2½"– weigh 1¼ to 1½ lbs.– shipping weight, 3 lbs. Prices shown are dealer's net. Except where otherwise indicated test leads with prods or test leads with alligator clips and insulated sleeves are $1.25 extra.

AC AMMETER	Model 370	Price $19.95
AC VOLTMETER	Model 371	Price $18.40
OHMMETER	Model 372 with Test Leads	Price $25.50
DC MILLIAMMETER	Model 373	Price $19.95
DC MICROAMMETER	Model 374	Price $23.00
DC AMMETER	Model 375	Price $19.95
AC VOLTMETER	Model 376	Price $19.95
DC VOLTMETER	Model 377	Price $19.95
AC MILLIAMMETER	Model 378	Price $22.60
BATTERY TESTER	Model 379 with Test Leads and Operator's Manual	Price $23.70

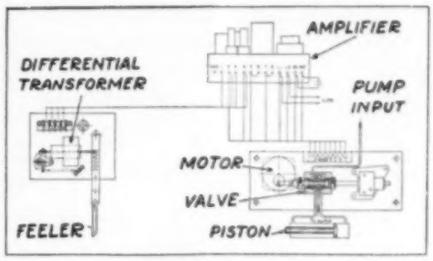
BURTON BROWNE ADVERTISING

Simpson ELECTRIC COMPANY
5200 W. Kinzie Street • Chicago 44, Illinois
Phone: COlumbus 1-1221
In Canada: Bach-Simpson, Ltd., London, Ont.
World's Largest Makers of Electronic Test Equipment

▼ BREVITY—Identify by IEN - 12902 If you write the maker ▼

CONTROL . . For side register of material web riding at 300 fpm.

Source: AUTOMATIC TEMPERATURE CONTROL CO. 5212 Pulaski Ave., Philadelphia 44, Pa.



As applied on high speed tenter

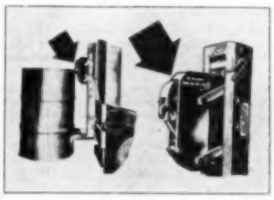
New application of the company's differential transformer, electronic amplifier and servo-motor is in connection with a hydraulic valve that operates a control piston to keep a moving web of material riding accurately in line. Actuation is by a sensing lever or edge feeler to control position of the armature in the transformer. Accuracy of the control is within 0.001 in. over a range of 3 in. with 0.25 oz. web-edge pressure.

Linear movement of the armature in the transformer, due to change in web position in either direction from center, results in an ac. signal in proportion to the amount of motion in a phase relative to the direction of the motion. The signal is amplified and the resulting output actuates the servo-motor. It will run in either direction to operate the hydraulic valve and apply pressure on one side or the other of the double-acting control piston. The motor stops when alignment is restored.

▼ BREVITY—Identify by IEN - 12903 If you write the maker ▼

TRUCK . . Drum handling attachment and adaptor to fit fork lift carriage

Source: MARVEL INDUSTRIES 2222-26 Cleveland St., Evanston, Ill.



Replaces truck forks

Liftomatic is a new adjustable attachment to mount by means of an adaptor on the carriage of a fork-lift truck to lift, carry and stack filled or empty drums. Weight of the attachment is 75 pounds. Load capacity is ½ ton. Height is 41 inches. Extension in front of the lift-truck carriage measures 10 inches.

The attachment mounts a cradle foot against which a drum rests and an adjustable pivoted head carrying a pair of fingers. These fingers open when the attachment is brought forward in contact with a drum and the carriage is lowered to bring the fingers into gripping position. They close on the drum chime when the carriage and attachment are lifted to pick the drum up from the floor. They open again to release when the drum is returned to the floor and the carriage lowered a little beyond contact position.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 60

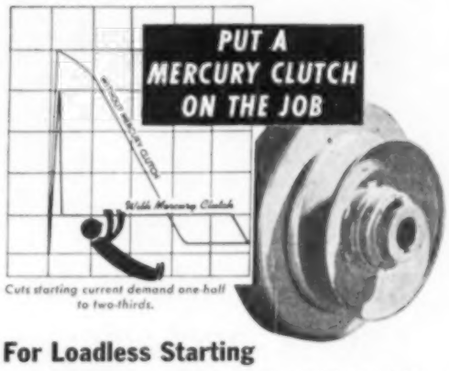
▼ BREVITY—Identify by IEN - 12904 If you write the maker ▼

IT'S NEW . . .
REQUEST YOUR COPY TODAY!
IT'S BARNES
HANDBOOK OF METAL SAWING!

Barnes new Handbook of Metal Sawing is a simplified, profusely illustrated booklet with 38 pages devoted to Hand Hack Saws, Power Hack Saws and Band Saws . . . for those of you who must train personnel quickly, it is invaluable. It is packed with facts and figures, tables and charts all based on actual production experience and compiled by experts. Write Barnes for your copy today.

W. O. BARNES CO., INC.
Dept. E, 1297 Terminal Ave., Detroit 14, Mich.

▼ BREVITY—Identify by IEN - 12905 If you write the maker ▼



Cuts starting current demand one-half to two-thirds.

For Loadless Starting

An electric motor equipped with a MERCURY CLUTCH reaches full speeds before any load is applied, utilizing the full power of the motor to start the load. If you build or operate machines or equipment powered by an electric motor, protect the motor and assure easy starting and smooth pick-up by fitting each motor with a MERCURY CLUTCH. Send for new Mercury Catalog C-8.

Mercury Clutch Division

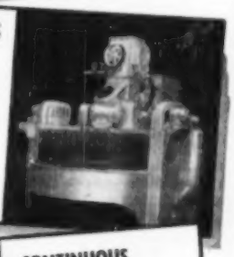
AUTOMATIC STEEL PRODUCTS INC. CANTON 6, OHIO

▼ BREVITY—Identify by IEN - 12906 If you write the maker ▼

Let PANGBORN Solve your Blast Cleaning Problem!

BATCH Cleaning: For top-economy batch cleaning specify Pangborn ROTOBLAST* Barrels. Sizes available from 3½ to 28 cubic feet. All models have push-button operation, automatic abrasive recovery and automatic loading device.

SEMI-CONTINUOUS Cleaning: Specify Pangborn ROTOBLAST* Tables. Type LF cleans flat castings; type LG cleans intricate pieces. Type LH, with two tables, lets operator load one table while work is cleaned on the other.



CONTINUOUS Cleaning: Pangborn Continuous-Flo ROTOBLAST* Barrels and one man provide uninterrupted cleaning. Loading and unloading is automatic, work is cleaned as it moves through Barrel.

Pangborn offers ROTOBLAST* equipment for every cleaning need. Full details on Tables, Barrels, Table-Rooms and Rooms are included in Bulletin 214. For your free copy *Mail Coupon Today!*

Look to Pangborn for the latest developments in Blast Cleaning and Dust Control equipment.

Pangborn *Trademark of Pangborn Corporation

BLAST CLEANS CHEAPER with the right equipment for every job.

PANGBORN CORP., 2300 Pangborn Blvd., Hagerstown, Md.
Gentlemen: Please send me Bulletin 214 without obligation.
Name.....
Company.....
Address.....
City.....Zone.....State.....

BREVITY—Identify by IEN - 12908 if you write the maker

world's largest assortment of standard moulds for small mechanical rubber parts

SEE US BEFORE YOU DESIGN IT!

Save money! Check our huge assortment of standard moulds — chances are we have just the mould you need. Lowest possible prices—fast, efficient service! Get our new 44 page catalog, today.

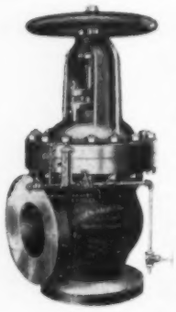
LAVELLE Rubber Company
1811 W. Hubbard, Chicago, Ill.
WRITE, WIRE, PHONE SPECIFICATIONS — TODAY!

BREVITY—Identify by IEN - 12909 if you write the maker

For Safe Protection on Boilers

GOLDEN-ANDERSON

Cushioned TRIPLE-ACTING NON-RETURN VALVES



- Automatic cut-in when pressure equals line-header pressure
- Isolate and prevent return steam flow when boiler pressure is lower than line-header pressure
- Isolate and prevent flow from boiler when break occurs in header

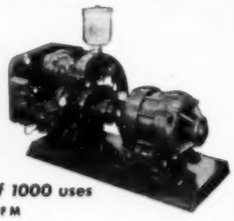
Chatter or hammer is prevented by the special Double Corliss Cushioning design. For less maintenance, longer service and greater all-around dependability, specify GOLDEN-ANDERSON *Cushioned Triple-Acting Non-Return Valves* and get the safety protection you need for high pressure boiler steam flow.

Write for Bulletin S-1A

Golden Anderson Valve Specialty Company
3079 KEENAN BUILDING • PITTSBURGH 22, PA.

BREVITY—Identify by IEN - 12910 if you write the maker

JOY WL-80 "UNITAIR"



the Compressor of 1000 uses
81 to 640 CFM

- ★ A size for *every* standard motor rating
- ★ Air cooled . . . Two stage
- ★ Force-feed lubrication
- ★ Small floor-space requirements

Write for this FREE HELP!

New 16-page Bulletin A-56—has complete details and a Selector Chart to help you choose the right compressor for your needs.

Consult a Joy Engineer W&D 13087

JOY MANUFACTURING CO.
General Offices: Henry W. Oliver Building
Pittsburgh 22, Pa.
IN CANADA: JOY MANUFACTURING CO. (CANADA) LIMITED
GALT, ONTARIO

NEW LITERATURE—Continued

"Is your own literature included?"

LUBRICATING . . Materials for bearings, gears and a penetrating oil; properties on 7 types. Bulletin BK-19, 20 pages. Keystone Lubricating Co., 2100 W. Lippincott, Philadelphia 32, Pa. **IEN-01524**

METAL TREATING . . Phosphate-forming material for iron, steel, zinc, cadmium; properties, application. "Anchorite 100", 8 pages. Octagon Process, 22 Bank, Staten Isl. 1, N. Y. **IEN-01525**

METAL TREATING . . "Pre-Fos" cleaning and phosphate-forming material for steel; work samples. Form 1297, 4 pages. Wyandotte Chemicals, 1319-A Dime Bldg., Wyandotte, Mich. **IEN-01526**

METALS . . Laminated silver tubes, wire, solid or inlay sheet; manufacture, sizes, weights. "Laminated Metals", 6 pages. Improved Seamless Wire, 773-77 Eddy St., Providence 5, R. I. **IEN-01527**

METERS . . Rotameters for liquids and gases; illustrated review on a range of models with capacity chart. Bulletin 110, 8 pages. Brooks Rotameter Co., Box 432-A, Lansdale, Pa. **IEN-01528**

METERS . . Daylight illumination pickup cell and Speedomax recorder; condensed specifications. Leaflet ND-46-72(1), 2 pages. Leeds & Northrup, 4934 Stenton, Philadelphia 44, Pa. **IEN-01529**

METERS . . "Amprobe" snap-around volt-ammeter; ratings, uses in tracing and locating electrical troubles. Pocket Manual 504, 16 pages. Pyramid Instr., 47 Howard, New York 13, N. Y. **IEN-01530**

MILLING . . End mills, milling cutters, keyseat cutters; descriptions, sizes, list prices, speeds, feeds. Bulletin 51-806, 12 pages. DoAll Co., 252-56 N. Laurel Ave., Des Plaines, Ill. **IEN-01531**

MOTOR PARTS . . Molded brush holders, commutators, slip-ring units; drawings, dimensions. "Triple-M Electronents", 44 pages. Midwest Molding, 4628 W. Fullerton, Chicago, Ill. **IEN-01532**

MOTORS . . Enclosed and explosion-proof electric motors, ¼ to 75 h.p.; two-page internal view. Form 1629, 8 pages. U. S. Electrical Motors, 202 E. Slauson Ave., Los Angeles 54, Calif. **IEN-01533**

MOTORS . . Single and polyphase ac., gearmotors, dc. motors, 1/20 to 400 hp.; condensed review. Bulletin MU-94-15, 4 pages. Wagner Electric Corp., 6488 Plymouth Ave., St. Louis 14, Mo. **IEN-01534**

NICKEL ALLOYS . . Additive to improve machinability of gray iron castings; properties, examples. "Nisiloy", 8 pages. International Nickel Co., 67 Wall St., Rm. 703, New York 5, N. Y. **IEN-01535**

PACKAGING . . Silica-gel desiccant; performance curves, quantity calculations, application data. "Protek-Sorb 121", 8 pages. Davison Chemical, 18-22 Hopkins, Baltimore 3, Md. **IEN-01536**

PACKAGING . . Asphalt-board packing-list protector for case exterior; properties, sizes. Leaflet 511, 2 pages. Fabricated Products Co., Box 127-A, Water St., West Newton, Pa. **IEN-01537**

PACKAGING . . Machines to wrap products or packages; picture examples from tea to ice cream. Folder, "Costs Go Down", 4 pages. Package Machinery Co., Longmeadow, Springfield, Mass. **IEN-01538**

PACKAGING . . "Tufflex" wood-fiber cushioning materials; three samples, description. "Cargo-Pak Kit", Wood Conversion Co., 197 First National Bank Bldg., St. Paul 1, Minn. **IEN-01539**

PACKINGS . . Braided and twisted asbestos packings; descriptions, sizes, packaging, service recommendations. "Asbestos Packings", 8 pages. Raybestos-Manhattan, Manheim, Pa. **IEN-01540**

PIPE FITTINGS . . Compression-type couplings for ¼ to 14-in. pipe; assembly steps, also repair coupling. "Morris Coupling", 4 pages. Morris Coupling & Clamp, Ellwood City, Pa. **IEN-01541**

PLASTIC PRODUCTS . . Fabricated polyethylene containers, tanks, pipe, valves, fittings; examples. "Aglene Products", 4 pages. American Agile Corp., 5804-8 Hough, Cleveland 3, Ohio **IEN-01542**

PLASTICS . . "Farlite" laminated plastic sheet; types, grades, engineering properties chart, uses. Folder 1808, 4 pages. Farley & Loetscher Mfg. Co., White & 7th Sts., Dubuque, Iowa **IEN-01543**

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 12911 if you write the maker

GET THE Thor STORY ON PORTABLE POWER SCREW DRIVERS

38 MODELS UNIVERSAL ELECTRIC CATALOG E-2

75 MODELS PNEUMATIC CATALOG P.1

77 MODELS HIGH-FREQUENCY ELECTRIC CATALOG 61

A SIZE AND TYPE FOR EVERY USER

Belt Sanders, Bench Grinders, Drills, Grinders, Hammers, Impact Wrenches, Nibblers, Nut Setters, Polishers, Sanders, Saws, Screwdrivers

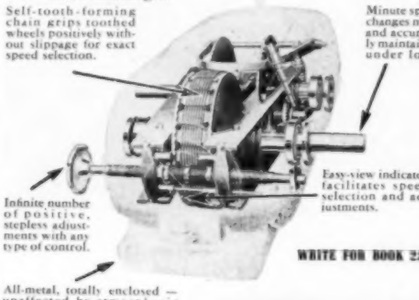
Thor PORTABLE POWER TOOLS

INDEPENDENT PNEUMATIC TOOL CO., AURORA, ILL.

BREVITY—Identify by IEN - 12912 if you write the maker

Why all industry uses P.I.V.

Link-Belt's P.I.V. is the variable speed drive that is not dependent on friction for power transmission. That's why only P.I.V. gives you all these advantages.



WRITE FOR BOOK 2274

LINK-BELT COMPANY: Chicago 9, Indianapolis 6, Philadelphia 40, Atlanta, Houston 1, Minneapolis 5, San Francisco 24, Los Angeles 33, Seattle 4, Toronto 8, Springs (South Africa). Offices, factory branch stores and distributors in principal cities. 12,519

LINK-BELT
P.I.V. VARIABLE SPEED DRIVE

BREVITY—Identify by IEN - 12913 if you write the maker

LANDIS SPECIFIES SNAP-LOCK TRADE MARK HERE

FOR SAFE, POSITIVE POSITIONING HERE

Electric traverse for the wheel base of this Landis Grinder is an exacting function. The critical control of over-travel depends upon positive, accurate action of the limit switch, to prevent damage to the machine.

No wonder they picked Snap-Lock! It's the choice of over 80% of the nation's machine tool builders, proved in use for dependability under the extremes of heavy-duty service. Here are the exclusive design and construction features that have contributed to this outstanding acceptance record:

1. SNAP make and break (fast acting—accurate)
2. Pure silver self-wiping contacts (no arcing)
3. Positive on or off locking (can't stop on dead center)
4. Separate sealed electrical and mechanical sides (for added safety)
5. Hardened steel moving parts (for greater strength, longer life)

Snap-Lock Limit Switches are built in a variety of types and sizes to suit every industrial application; special mountings are available. May we show you how they can be designed into your product?

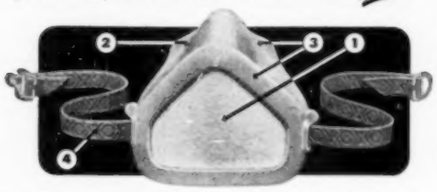
The complete range of Namco Standard Snap-Lock Limit Switches is illustrated and tabulated in Bulletin EM-50.

ELECTRICAL MANUFACTURING DIVISION

The NATIONAL ACME CO.
CLEVELAND, OHIO

BREVITY—Identify by IEN - 12915 If you write the maker

4 Reasons why FLEX-A-FOAM (and only FLEX-A-FOAM) provides Dust Protection your workers will welcome and Wear



1. Pure latex washable filter purifies the air of non-toxic nuisance dusts as small as 1/25000 of an inch — yet it's easier to breathe and talk through than an ordinary pocket handkerchief! Out-wears throw-away type filter as much as 100 to 1.

2. Perfectly contoured for self-adjusting fit to every size and shape of face—designed for wear with spectacles or goggles with perfect comfort.

3. Positive-locking frames of polyethelene plastic, so flexible and tough they're unbreakable in normal usage. Complete mask weighs only 1 ounce. Attractively styled to suit the most discriminating wearer.

4. Defiance non-skid, natural rubber head-band with adjustable hook-and-eye fasteners holds mask firm and comfortably snug without tension or hair-pulling.

FLEX-A-FOAM FILTER MASK

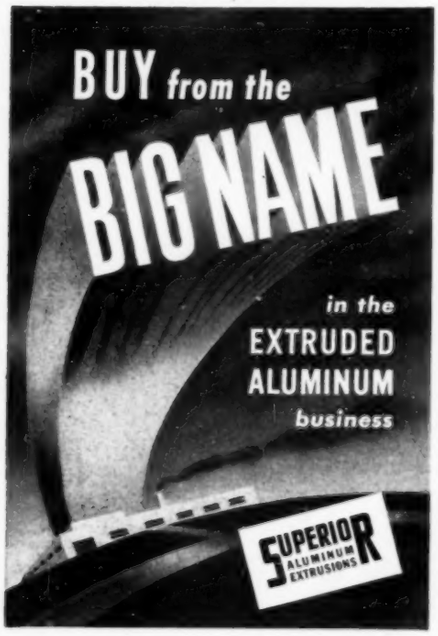
Sample $1.40 postpaid

★ Write for new descriptive folder

THE GOGGLE PARTS COMPANY • CLEVELAND 13, OHIO

BREVITY—Identify by IEN - 12916 If you write the maker

BUY from the BIG NAME in the EXTRUDED ALUMINUM business



Finished Mouldings for YOUR Product

● Whatever you make to sell . . . dinette sets, doors, laboratory instruments, functional shapes, mechanical pencils, windows, soda fountains . . . Youngstown Manufacturing, Inc., can be your supplier of aluminum in any extruded shape for your product. Shapes of intricate design, or standard shapes, polished or finished to your specifications, ready for your assembly line, is the business of Youngstown Manufacturing, Inc., the big name in the aluminum moulding business. Engineering and designing service available. Write about your requirements.

YOUNGSTOWN MANUFACTURING, INC.

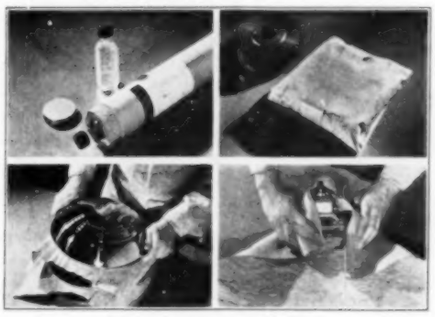
SUPERIOR ALUMINUM EXTRUSIONS

66-76 SOUTH PROSPECT ST.
YOUNGSTOWN 6, OHIO

BREVITY—Identify by IEN - 12918 If you write the maker

PACKAGING . . Cushioning papers for product protection in shipping

Source: NICHOLS PAPER PRODUCTS CO.
1051 Green Ave., Green Bay, Wis.



Ask for Sof-Rap-Krepak bulletin

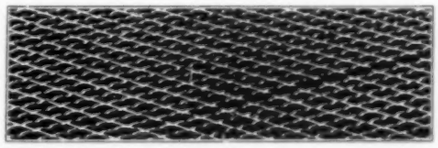
Sof-Rap, one of two new cushioning papers for product packaging, is made up of one sheet of two-way flexible crinkled cushion paper and a second sheet of equally flexible tough crinkled kraft paper. The two are strip laminated to permit slippage between them. Thus the top sheet can slip over the bottom sheet and reduce friction which otherwise would be transmitted with possible damaging mars and scratches to the product. This material is available in medium, heavy and extra-heavy weight in four widths from 36 to 60 in. and in 250-ft. lengths for the medium and heavy grades. Three widths are between 36 and 48 in. and length is 125 ft. for the extra-heavy material.

Krepak is the second of the new materials. It omits the kraft backing and presents cushioning action in the single soft two-way flexible crinkled cushion paper. Two paper thicknesses measuring 0.009 and 0.014 in. are available in 36 or 48 in. rolls measuring 250 linear feet per roll.

BREVITY—Identify by IEN - 12919 If you write the maker

FLOORS . . Steel grating rates 20 ton on 4 ft. span, for bridges

Source: KERLOW STEEL FLOORING CO.
218-224 Culver Ave., Jersey City 5, N. J.



Snow, rain, mud fall through

Type IQ-35 is a new steel grating particularly suited for use as bridge flooring. It is made with bars parallel to traffic in one design and transverse to traffic, as shown in the illustration, in a second design. In the latter type the transverse bars are placed higher than the longitudinal bars and are serrated to provide good traction for vehicle tires. Load rating of 20 ton is based on distribution over a 15-in. circle. Weight per sq. ft. is 19 pounds. Finish is in red-lead paint.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 12920 If you write the maker

TAC does what no other tool can do!

AT LAST! AN OPEN-END RATCHET WRENCH — the world's first true universal wrench. A patented design for connections on tubing, rods, piping, conduit, studs, etc. Sixty-four socket sizes from ¾" to 4". Smallest effective ratcheting arc yet — 5° to 7½°. TAC will also do every job any ordinary ratchet wrench will do; one TAC set replaces literally dozens of single-purpose hand tools.

makers of advanced tools for industry

TAC

TAC is the reg'd trade-mark of

TUBING APPLIANCE CO.
7112 South Victoria • 18321 Anza Ave. • Los Angeles, Calif.

BREVITY—Identify by IEN - 12921 If you write the maker

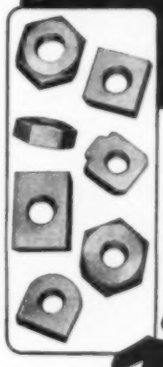
UNITED STATES STEEL COMPANY, PITTSBURGH
COLUMBIA STEEL COMPANY, SAN FRANCISCO
TENNESSEE COAL, IRON & RAILROAD COMPANY, FAIRFIELD, ALA.
UNITED STATES STEEL EXPORT COMPANY, NEW YORK
UNITED STATES STEEL SUPPLY COMPANY,
Warehouse Distributors, Coast-to-Coast

U·S·S MULTIGRIP FLOOR PLATE

UNITED STATES STEEL

BREVITY—Identify by IEN - 12922 If you write the maker

Where machine screws and studs are used— Pheoll MACHINE SCREW NUTS fit and look better in completed assemblies



Improve product appearance, join parts faster, use Pheoll hexagon, square, and special machine screw nuts. Made in steel or brass, they are tapped straight for snug, tight fits. Faces are held to accurate dimensions and meet rigid inspection requirements.

Standard listed sizes of hexagon and square, steel and brass machine screw nuts are carried in stock. Extra sizes, both single chamfered—single countersunk and double chamfered—double countersunk are stock items. Machine screw nuts in different metals made to order. Semi-finished hexagon steel and brass nuts are stock items.

Write for complete information, specifications and prices.

ADDITIONAL PHEOLL PRODUCTS
Wing Nuts • Tapping Screws
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Pheoll MANUFACTURING COMPANY • 3700 Bennett Road Chicago 50, Illinois

SCREWS • BOLTS • NUTS — Industrial Fasteners and Molding Devices

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GRAMIX® parts can meet tolerances of .0005

Gramix parts, die-pressed of powdered metal mixtures to tolerances as close as .0005, fit practically every design need. Gramix parts eliminate costly machining time and are oil impregnated for self-lubrication. Gramix can help improve the mechanical performance of your products, save time and money. Write today for full facts.

THE UNITED STATES GRAPHITE COMPANY
Division of The Wickes Corporation
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OZITE all-hair felt has an outstanding record for solving problems of cushioning, padding, thermal and sound insulation. Our research and engineering staff are ready to give you competent assistance should you have any problems in these or similar applications.

OZITE felt in standard weights and thicknesses meets most production requirements. Special weights and thicknesses; as well as paper, cloth, or foil backings and stitched reinforcements may be made in production quantities.

Write today for OZITE bulletin No. 1500. If you desire samples for test, simply send a brief description of your application.

AMERICAN HAIR & FELT CO.
Dept. X110, Merchandise Mart Chicago 54, Illinois

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7,632,113 OPERATIONS

Actual performance of a standard 3/8", 4-Way AUTOMATIC solenoid valve before maintenance was required.

RUGGED CONSTRUCTION FOR HEAVY DUTY OPERATION
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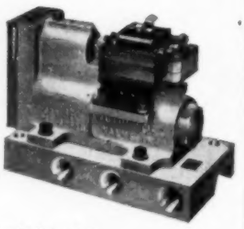
CYCLING TO 600 PER MIN.
•
FOR CONTROL OF COMPRESSED AIR-PRESSURES 20 TO 150 LBS.



Available in standard pipe sizes.

Thousands of AUTOMATIC 3-way and 4-way valves in daily operation. Write for bulletin and prices. Attractive quantity and O.E.M. discounts.

PIONEERS and SPECIALISTS in PILOT OPERATED SOLENOID CONTROLLED VALVES

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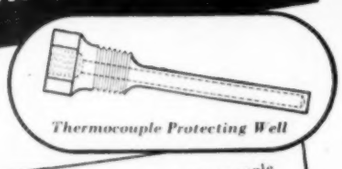
The Walls of this Well are Uniform!



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THE Brown *Precision-Made* Thermocouple Protecting Well has a uniform wall thickness of engineered accuracy . . . is available in a complete line . . . can be supplied in practically all common metals and alloys, of almost any wall thickness, to withstand high temperatures and pressures. And, quick delivery can be made from stocks maintained at Philadelphia, Cleveland, Chicago, Atlanta, Houston, Los Angeles and San Francisco. Call in your local Honeywell Supplies Man for full particulars. MINNEAPOLIS-HONEYWELL REGULATOR CO., *Industrial Division*, 4456 Wayne Ave., Philadelphia 44, Pa.

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"Condensed reviews for busy readers"

PRINTING . . "Nylex" nylon typewriter ribbon; details on standard and heavy duty types. Folder RSR-141, 4 pages. Remington Rand Inc., 315 - 4th Ave., Rm. 1618, New York 10, N.Y. **IEN-01544**

PROCESSING . . Heaters, tanks, relief heads, controls; condensed data. "BS&B in Process Industries", 20 pages. Black, Sivalls & Bryson Inc., 7502 E. 12th St., Kansas City 3, Mo. **IEN-01545**

PROCESSING . . Chemical process equipment of tantalum; metal properties, equipment examples. Catalog F-1030, 32 pages. Fansteel Metallurgical, 2204 Sheridan, North Chicago, Ill. **IEN-01546**

PROTECTING . . Equipment for civil defense, listed by service, function and specifications. "Civil Defense Equipment", 28 pages. Mine Safety Appliances, 21 Braddock, Pittsburgh 8, Pa. **IEN-01547**

PUMPS . . Fractional-hp. pump-and-motor units to 80 gpm., heads to 100 ft.; performance curves, dimensions. Bulletin 52-B-7529, 6 pages. Allis-Chalmers, 909 S. 70th, Milwaukee 14, Wis. **IEN-01548**

PUMPS . . "Maisch" metering pumps of stainless steel and carbon; models, ratings, sterilizing. Catalog 51-A, 16 pages. Mechanical Products Corp., 166-70 N. Ogden Ave., Chicago 7, Ill. **IEN-01549**

PUMPS . . Centrifugal pumps, small and large, 1½ to 84 in.; illustrated review on a line. Pocket Bulletin 183, 8 pages. Morris Machine Works, 45 E. Genesee, Baldwinsville, N. Y. **IEN-01550**

PUMPS . . Motor-driven controlled-volume pumps; models, capacity selection tables, application examples. Bulletin 251, 24 pages. Milton Roy Co., 1302 E. Mermaid Ave., Phila. 18, Pa. **IEN-01551**

PUMPS . . Centrifugal sump pumps; selection data on eight sizes from 1½ to 8 in., wet and dry pit types. Bulletin WQ-220, 8 pages. Warren Steam Pump Co., 50 Warren St., Warren, Mass. **IEN-01552**

PYROMETER SUPPLIES . . Thermocouple wells; selection, material recommendations, sizes, list prices. Catalog 200-1, 28 pages. Brown Instr. Div., 4456 Wayne, Philadelphia 44, Pa. **IEN-01553**

REAMING . . Hand, shell, expansion, taper-pin, stub, chucking reamers, arbors; sizes, list prices. Bulletin 51-814, 12 pages. DoAll Co., 252-56 N. Laurel Ave., Des Plaines, Ill. **IEN-01554**

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RELAYS . . Series-80 telephone-type relays, standard and sealed; specifications, dimensions. Bulletin MTR-84, 4 pages. Signal Eng. & Mfg. Co., 154 W. 14th, 11th Floor, New York 11, N. Y. **IEN-01557**

RELAYS . . In a range of types, also timers; selection procedure, rating and dimension data, list prices. Catalog H, 20 pages. Struthers-Dunn Inc., 148-52 N. 13th St., Phila. 7, Pa. **IEN-01558**

ROOFS . . "Laykold Fibrecoat" for bituminous and metal surfaces; properties, application. Folder B-13, 4 pages. American Bitumuls & Asphalt Co., 202 Bush St., San Francisco 4, Calif. **IEN-01559**

SEALING . . Thread-sealing and valve-lubricating materials; data on types for aluminum, oxygen, others. Catalog 5400, 4 pages. Parker Appliance, 17323-27 Euclid, Cleveland 12, Ohio **IEN-01560**

SEALING . . Materials and service to seal porous castings; description, picture examples. "Impregnation", 4 pages. Polyplastex International, 1383-87 Commerce, New York 61, N. Y. **IEN-01561**

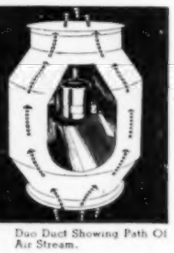
SEALING . . Rubber-and-fabric packings; sizes, service recommendations on six types. "Duck and Rubber Packings", 8 pages. Raybestos-Manhattan Inc., 47 Thomas St., Manheim, Pa. **IEN-01562**

SHEARING . . Machines for sheet and plate; models, cutting principle, sketches of work handled. Bulletin, 8 pages. American Pulimax Co., 2631 N. Western Ave., Chicago 47, Ill. **IEN-01563**

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 12927 if you write the maker

bothered by FOUL AIR GAS SMOKE?
CALL
INDUSTRIAL AIR



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The Industrial Air Duo Duct is specially designed to exhaust corrosive gases, fumes, smoke, and to induce draft on boilers. It has two exhaust ducts joined at both the suction and discharge ends. Both motor and bearing are mounted in the internal well, protected from the harmful corrosive effects of exhaust air, smoke or fumes. The internal well is open on two sides for proper and efficient cooling. The entire unit is designed for temperatures as high as 700° Fahrenheit and is available in diameters from 14" through 72", 1000 to 100,000 CFM.

Duct Fans
Direct or Belt Driven
Utility Man Cooler
Portable Man Cooler
Roof Ventilators
Duct Type Fan

Represented in All Principal Cities
Write Dept. 1202 for Catalog of Complete Line

THE HARVEY P. BERTRAM CO.
1008 W. Ninth St. Cincinnati, Ohio

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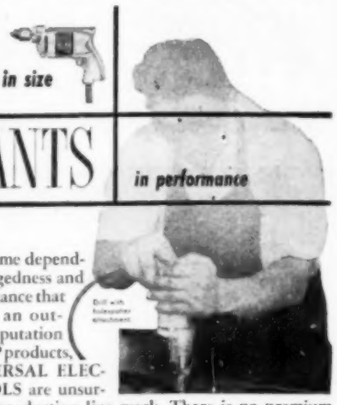

With the same dependability, ruggedness and low maintenance that have built an outstanding reputation for other CP products, CP UNIVERSAL ELECTRIC TOOLS are unsurpassed for production line work. There is no premium for the superior quality of these drills, which are sold direct to the user by Chicago Pneumatic, the only major company selling electric tools directly to industry.

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CHICAGO PNEUMATIC TOOL COMPANY
General Offices: 8 East 44th Street, New York 17, N. Y.

PNEUMATIC TOOLS • AIR COMPRESSORS • ELECTRIC TOOLS • DIESEL ENGINES
ROCK DRILLS • HYDRAULIC TOOLS • VACUUM PUMPS • AVIATION ACCESSORIES

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WALES DRILLING MACHINES

For Precision Locating, Drilling and Reaming of Holes

This exclusive Wales Drilling Machine fills a definite need. *There is no other drilling machine or jig borer like it.*

Accuracy is the primary consideration in building this specially designed and ruggedly constructed Wales Drilling Machine which combines simplicity of operation, easier locating and faster production.

Conveniently located built-in 1/32" scales and dial-type gages calibrated in ten thousandths of an inch accurately locate drill head and slide rail.

Write TODAY for Catalog DM.

WALES-STRIPPIT CORPORATION
George F. Wales, Chairman
361 Payne Ave., N. Tonawanda, N. Y.
(Between Buffalo and Niagara Falls)
Wales-Strippit of Canada Ltd.
Hamilton, Ontario
Specialists in Punching and Notching Equipment

LOCATING . . . Holes are located by placing end measures in V-grooves on bridge and slide rail. Two speed gearing provides rapid traverse.

DRILLING . . . Showing typical small template being drilled.

REAMING . . . Showing hole in large template being reamed by simply interchanging the drill and bushing with corresponding size reamer and reamer bushing.

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BAYFLEX • DURACUT • SAF-T-CUT, reinforced abrasive disc-wheels . . . the masters of your weld grinding and finishing problems. Greater resiliency and safety make these "Big Three" products first choice in foundries, metal fabricating and welding shops.

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Westboro, Mass.
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BAY STATE

Send for latest information-packed "BIG-THREE" catalog. It contains such data as mounting instructions, recommended speeds, charts, specific applications, etc.

BREVITY—Identify by IEN - 12932 If you write the maker

"We Cut Loading and Unloading Costs 75% with a BAKER FORK TRUCK"

"—also saved ourselves a costly construction job"
—UNITED STOVE COMPANY, Ypsilanti, Mich.

• "Since our plant floor, shipping and receiving areas and shop yard are all on the same level, we faced the problem of either building a ramp and dock or finding some other means of getting loads into and out of highway trucks more quickly and economically. A Baker Fork Truck provided the answer. Besides eliminating the need for expensive rebuilding, with the resulting disruption in production, the truck helps us realize up to 75% in our loading and unloading operations, including scrap handling."

A Baker Representative will gladly help you solve similar problems in your plant.

BAKER INDUSTRIAL TRUCK DIVISION *of The Baker-Raulang Company*
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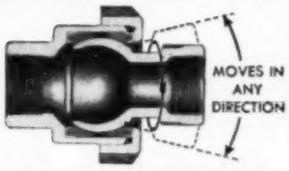
Baker INDUSTRIAL TRUCKS

BREVITY—Identify by IEN - 12933 If you write the maker

BARCO *Flexible* **BALL JOINTS**

—when you need movable joints in piping handling



STEAM, OIL, CHEMICALS

Send for New Bulletin No. 215

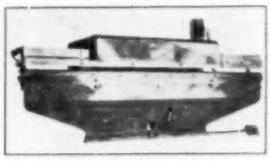
- Provides for movement in piping—up to 40° side flexibility, plus 360° rotating movement.
- Stainless steel and chemically inert gaskets for strong chemicals. No metal-to-metal contact. Choice of body materials.
- One Barco Ball Joint does the work of two or more ordinary swivel joints because "it moves in any direction!"
- Many models available. For pressures to 6,000 psi; temperatures to 1000°F. 15 different sizes, ¼" to 12". *Ask for recommendations.* BARCO MFG. CO., 1838-N Winnemac Ave., Chicago 40, Ill.

THE ONLY TRULY COMPLETE LINE OF FLEXIBLE BALL, SWIVEL, SWING AND REVOLVING JOINTS

BREVITY—Identify by IEN - 12934 If you write the maker

PACKAGING . . Sealing machine applies heat and pressure, motor driven

Source: AUTOMATIC SCALE CO.
P. O. Box 46-A, New York 14, N. Y.



Meets military requirements

Seams in heat-sealing packaging materials are closed and sealed by application of electrically-generated heat and cam-actuated pressure in this new Model UHS-54 machine. Seals ranging from ¾ to 1¼ in. in width and in any length to 54 in. are made at a single stroke of the bar-type head. Temperature is adjustable to 550 deg. F. Pressure is maximum at 1500 pounds. Control is centered at a foot switch on the end of a flexible tube to leave both the operator's hands free to feed the material.

Pressure is sufficiently high so a perfect seal can be made across a splice involving several thicknesses at one or more points in an overall length. In addition to adjustment for pressure and temperature there is a combination of step pulleys by which dwell time can be set for heat-sealing materials of various types.

BREVITY—Identify by IEN - 12935 If you write the maker

INSULATING . . Silicone-glass cloth for use on cables and in motor winding

Source: GENERAL ELECTRIC CO.
101 Plastics Ave., Pittsfield, Mass.

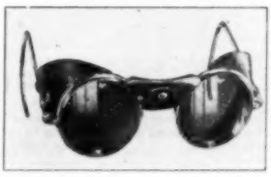
In production at Coshocton

Glass cloth is passed through a liquid solution of silicone rubber in manufacture of a new insulation for use on cables and in motors. Following the dip operation, heat is employed to cure the rubber and the combined materials are ready for use. The process is continuous. Characteristics include resistance to high temperature, flexibility and good electrical properties. The cloth is being produced in 4 to 10-mil thickness and in width to 36 inches.

BREVITY—Identify by IEN - 12936 If you write the maker

PROTECTING . . Spectacle type goggle with leather side shields, for welders

Source: AMERICAN OPTICAL CO.
12-16 Mechanic St., Southbridge, Mass.



Series 3081A replaces the company's previously developed No. 3081 welder's goggle. The new unit provides adjustment for correct fit after loosening the end-piece screws. Side shields made of soft leather can be taken off for cleaning, sterilizing or replacing after the screws have been removed. The same leather also snaps in place removably over the bridge and reinforcing bar.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 12937 If you write the maker

Leach **RELAYS**

Precision is the Keynote—in Production and Performance

The word precision perfectly characterizes every relay manufactured by LEACH, and this precision is most apparent in their performance. Whatever the purpose, LEACH can provide relays of advanced design for flexibility, economy and unexcelled performance. Highest standards of engineering, materials and workmanship. For better controls through better relays—contact LEACH.

LEACH RELAY CO.
5915 AVALON BOULEVARD, LOS ANGELES 3, CALIF.
Representatives in Principal Cities of U. S. and Canada

BREVITY—Identify by IEN - 12938 If you write the maker

In Atmospheres Containing Dust, Mist, Dirt, Fog . . . Protect the Power that Drives Your Production Machines

Century 15 horsepower TEFC motor operates in coolant fog from this grinder.

Use Century

Totally Enclosed Fan Cooled Motors

Where the air is charged with substantial quantities of metallic or abrasive dusts, coolant mists or fog, or oil-laden factory dusts, Century Type TEFC Motors help maintain uninterrupted production.

Vital parts of the Motor are isolated from the outside atmosphere. A large fan keeps the motor temperature well within safe limits.

Wherever there are adverse atmospheric conditions, specify Century Totally Enclosed Fan Cooled motors.

Many types and kinds of Century motors are built in sizes from 1/8 to 400 horsepower.

CENTURY ELECTRIC COMPANY
1806 Pine Street, St Louis 3, Missouri
Offices and Stock Points in Principal Cities 7038

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With Kodagraph Autopositive Paper— the revolutionary material that produces positive photographic intermediates *directly*; that can be *handled* in room light . . . *exposed* in a direct-process or blueprint machine, or vacuum frame . . . *processed* in standard photographic solutions.

1. **Redrafting time saved.** IBM makes Autopositives of standard plug-board panel drawings on which various wiring arrangements must be shown. To these intermediates, draftsmen simply add the wiring detail . . . and print-making masters are ready.

2. **Blueprints can be reproduced.** These prints are used to exchange design information between IBM plants. Whenever extra prints are needed for the shop, Autopositives are made directly and used to produce the required prints.

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With Kodagraph Autopositive Film— which is handled, exposed, and processed like Autopositive Paper, but whose base is famous Kodak safety film—highly translucent, tough, matte-surfaced (to take pen or pencil notations).

4. **Old drawings are restored.** Weak lines are intensified, backgrounds are cleaned up, when IBM reproduces certain types of old drawings on Kodagraph Autopositive Film. As a result, sharp, legible shop prints can be produced at top speeds.

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Write today for a free copy of "Modern Drawing and Document Reproduction." It gives full facts on the complete line of Kodagraph Reproduction Materials, which you, or your local blueprinter, can process conveniently, economically.

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Industrial Photographic Division
Rochester 4, N. Y.

Kodak

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BOSTITCH H2B
Self-Feeding
Stapling Hammer

Improved 20 Ways

Setting new high standards of durability and performance. New door makes loading quicker and easier . . . cannot be snapped open in use. Other parts improved and strengthened. Plated to resist rust. Accelerated action drives ¼" and ⅜", or ½" staple all the way home into hard or gummy wood — with a single blow. One-hand operation leaves other hand free to hold work in position. Three times faster than hammer and nails. WRITE FOR BULLETIN 270. BOSTITCH, 450 Mechanic St., Westerly, Rhode Island.

BOSTITCH®
fastens it better, AND FASTER with wire

ALL TYPES OF MACHINES FOR APPLYING STAPLES
ALL TYPES OF STAPLES APPLIED BY MACHINES

▼ BREVITY—Identify by IEN - 12942 If you write the maker ▼

Drill Hardened Steels
without Annealing —

With the new, improved "HARDSTEEL" Drill, you can do accurate, smooth drilling, countersinking, counterboring and reaming in steels hardened by any process without first annealing the work. And they work with equal ease on work-hardening steels and high carbon—high chrome steels of any degree of hardness.

"HARDSTEEL" Drills fit standard drill presses. They save time and reduce rejects. They permit engineering changes requiring additional drilling after hardening. And parts drilled after hardening always match at assembly.

Write for a copy of the "HARDSTEEL" Operators Manual showing how "HARDSTEEL" drills are cutting costs in thousands of plants.

You Harden It—We'll Drill It—
With "HARDSTEEL"

BLACK DRILL COMPANY
Division Black Industries
1378 East 222nd St. • Cleveland 17, Ohio

Also makers of—
BLACK DRILLING UNITS—AUTOMATIC, SELF-CONTAINED—FOR COST-CUTTING PRODUCTION ON ALL MATERIALS
Write for information

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Protect your closed process vessels for as little as $5.00

WITH THE
HONEYWELL
VACUUM BREAKER

The discharge of fluid from closed vessels sometimes becomes so rapid that the pressure differential between outside and inside causes collapse. The Honeywell Vacuum Breaker prevents such costly damage by keeping the vacuum within safe limits . . . cheap insurance considering cost of a half inch size is less than $5.00.

Sizes ½" to 3". . . screwed connections . . . spring loaded construction. Made of bronze throughout. Vacuum adjustable from 2 to 24 inches of mercury. Relief Capacity from 3.7 cu. ft. of air per minute for ½ inch size, to 720 cu. ft. per minute for 3 inch size. Prompt shipment from stock. Send in your orders today.

MINNEAPOLIS-HONEYWELL REGULATOR CO., *Industrial Division*, 1911 Windrim Ave., Philadelphia 44, Pa. Offices in more than 80 principal cities of the United States, Canada and throughout the world.

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VALVE PRODUCTS

NEW LITERATURE—Continued

"Subjects range from Adhesives to Welding"

SIGNS . . Safety and warning units to adhere to any surface; colors, wording list on standard units. Bulletin 145-A, 4 pages. W. H. Brady Co., 14-18 E. Spring St., Chippewa Falls, Wis. **IEN-01564**

SLITTING . . Machine to slit and rewind dry-finish papers in rolls to 82 in. wide; specifications. Bulletin 951, 4 pages. Johnstone Eng. & Machine Co., Gay & 1st Ave., Parkesburg, Pa. **IEN-01565**

SNOW PLOWS . . Gasoline and electric models, also lawn mowers; models, condensed specifications. Folder, "Sno-Blo", 6 pages. Sensation Mower, 7529-33 Burlington, Ralston, Nebr. **IEN-01566**

SPRINGS . . For dies and other uses; sizes, ratings, list prices on 500 standard units and assortments. Bulletin 1951, 8 pages. Die Supply Co., 1402 Brookpark Road, Cleveland 9, Ohio **IEN-01567**

STAMPINGS . . Both short runs and production quantities; illustrated facilities, notes on methods. "Service in Stampings", 12 pages. Laminated Shim Co., 85 Union, Glenbrook, Conn. **IEN-01568**

STEELS . . For aircraft; analysis and sizes in stock, revised Military specifications. "Aircraft Steels", 72 pages. Joseph T. Ryerson & Son Inc., P. O. Box 8000-AA, Chicago 80, Ill. **IEN-01569**

STRAIGHTENING . . Machine for bar and tube; data summaries on this and other for turning, polishing. Folder, "Machines", 4 pages. Medart Co., 102 Potomac St., St. Louis 18, Mo. **IEN-01570**

SWITCHES . . Rotary Packet units, 10 to 500 amp., 115 to 600 volts; assemblies, deck details. Bulletin, "Type RP" 12 pages. Arrow-Hart & Hegeman, 101 Hawthorne, Hartford 6, Conn. **IEN-01571**

SWITCHGEAR . . Type CSO-1 oil switches, 15,000 volts, 200 amp.; con[illegible] Bulletin "S-69", 4 pages. Westinghouse Electric Corp., 511 Wood St., Pittsburgh 30, Pa. **IEN-01572**

TESTING . . Recording oscillograph for static or dynamic data; models, traces. Bulletin CEC-1500B, 16 pages. Consolidated Eng. Corp., 302 N. Sierra Madre Villa, Pasadena 8, Calif. **IEN-01573**

TESTING . . Daylight fluorescence detector-comparator; data on four models and on sample holders. Folder, "Fluoretor", 4 pages. Menlo Research Lab., Box 522-A, Menlo Park, Calif. **IEN-01574**

TESTING . . Portable surface-hardness tester for Rockwell B, C and Brinell values; description. "Metalometer", 4 pages. Peabody Industries, 12127 Hamilton, Highland Park 3, Mich. **IEN-01575**

TESTING . . High-potential dc. test and cable-fault locating unit; operation, safety features. "DC Test Set", 4 pages. Peschel Electronics Inc., 11-15 Garden St., New Rochelle, N. Y. **IEN-01576**

TESTING . . Radio noise filters for electric power lines to shielded test rooms; models, ratings. Catalog 201, 16 pages. Tobe Deutschmann, 919-23 Providence, Norwood, Mass. **IEN-01577**

TESTING . . Non-destructive inspection equipment for metal parts, using radio-isotope; details, examples. "Cobalt-60 Radiography," 12 pages. Traceriab, 130-A High, Boston 10, Mass. **IEN-01578**

THREADING . . Cam suggestions for the company's self-opening die heads for screw machines. "Die Headlines 3-12", 4 pages. Eastern Machine Screw, 136 Truman, New Haven, Conn. **IEN-01579**

TIMING . . Electric clock movements and switch timers for product application; drawings, specifications. Bulletin CM-11, 12 pages. Sessions Clock Co., 50 Horton St., Forestville, Conn. **IEN-01580**

TRUCKS . . Type-F8 fork lift truck, 2,000 lb. capacity; construction points, attachments. Bulletin 1327, 8 pages. Baker-Raulang Co., 1248-52 W. 80th St., Cleveland 2, Ohio **IEN-01581**

TRUCKS . . Power lift trucks, pallet trucks, hand trucks, portable elevators, racks; data summaries. Bulletin 5191, 4 pages. Barrett-Cravens Co., 4609 S. Western Blvd., Chicago 9, Ill. **IEN-01582**

TRUCKS . . Electric and gasoline-power lift trucks, tractors, hand trucks; condensed data, attachments. Catalog TC-53, 8 pages. Clark Equipment Co., Battle Creek 49, Mich. **IEN-01583**

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BJ SUBETTE PUMP . . .
a smaller version of the highly successful
BJ Submersible Deepwell Pump

For over 23 years BJ Submersible Deepwell Pumps have proven themselves in thousands of installations. Now the Subette extends the BJ Submersible application to wells as small as 6" ID. An ideal pump for primary water supply or stand-by use in industrial plants.

Since sealed pump and close-coupled electric motor operate submerged in the well, no expensive pump house or installation is required . . . crooked or extra deep wells are no problem . . . underground location is safe from sabotage . . . no motor floodout during emergency conditions of fire or flood . . . operation is silent, invisible . . . and there is no water contamination from dirt, oil or foreign matter.

The BJ Subette provides capacities to 130 gpm and heads to 765 feet.

Larger BJ Submersible models are also available for greater capacities.

Byron Jackson Co.
PUMP DIVISION
P. O. Box 2017, Terminal Annex
Los Angeles 54, California

OFFICES IN PRINCIPAL CITIES

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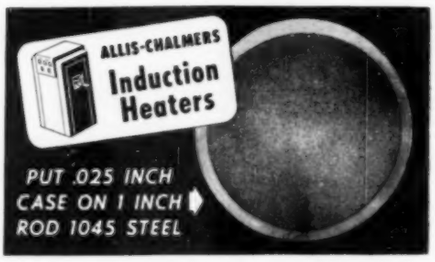


Cost: 37/100¢ per inch

THIS IS TYPICAL of what Allis-Chalmers Induction Heaters can do to speed up production. On job after job, these units do hardening, annealing, soldering, brazing, and heating cheaper, faster, better.

Cheaper — because so many more parts can be processed in an hour. **Faster** — because induction heating takes only seconds. **Better** — because uniform from part to part.

In addition, the Allis-Chalmers Induction Heater is versatile. By simply changing the work coil, the same heater can braze, solder, anneal, case, and through-harden.

Find out what Allis-Chalmers Induction Heaters can do to lower costs in your plant. Call your nearby A-C District Office, or write Allis-Chalmers, Milwaukee 1, Wisconsin. A-3330

ALLIS-CHALMERS A-C

▼ BREVITY—Identify by IEN - 12946 If you write the maker ▼

the BUDA JACK
with 1001 uses

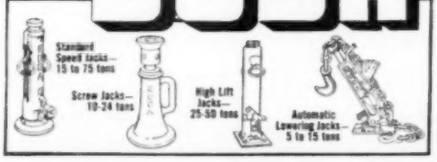
10" OVERALL HEIGHT
FAST RISE
SAFE, EASY LIFTING
NO MAINTENANCE

Simple, compact design — rugged construction, low height, high lifting capacity—safe, easy operation makes these BUDA Ball Bearing Jacks ideal for your heavy lifting jobs. Require no maintenance. Many safety features. Write for Bulletin and complete details.

THE BUDA COMPANY, HARVEY, ILL.

BJ-9

BUDA



▼ BREVITY—Identify by IEN - 12947 If you write the maker ▼

A few turns will do it!...

BUCKINGHAM... Thread RESTORERS

Just slip on, tighten and turn. That's all there is to it—it's that simple . . . and quick . . . And what *results!*

Flats and nicks are eliminated—even heavily rusted and corroded threads are cleaned pronto. No more drilling or hack sawing to restore damaged male threads —when you have a Buckingham Thread Cleaner handy.

Follows the pitch of any right or left hand thread—sizes range from ¼" to 4" root diameter. No need to insert or change dies. Cutting jaws adjust easily to proper size on the threads. See your nearest Buckingham dealer—or write.

6103 —	¼" to 1" root diam.	$ 6.50
6203*—	¼" to 1" root diam.	8.50
6104 —	1" to 2⅝" root diam.	12.00
6106 —	2" to 4" root diam.	27.50
6204*—	1" to 2⅝" root diam.	21.00

*Short swing type.

BUCKINGHAM MANUFACTURING CO., INC.
49-51 Travis Street Binghamton, N. Y.

▼ BREVITY—Identify by IEN - 12948 If you write the maker ▼

ALLEN TRU-ROUND DRYSEAL PIPE PLUGS

100% PRESSUR-FORMD.

- NEVER OUT OF ROUND
- LEAKPROOF METAL-TO-METAL SEAL
- FULL STRENGTH SOCKET WON'T STRIP OR WEAR

Ideal for extreme pressure applications. For use with dry-seal taps. No sealing compound required. Pressur-Formd socket, unweakened by drilling and broaching, is stronger than the strongest key. Pressur-Formd burnished threads are nick and distortion-free, insure perfect thread contact, won't gouge softer metals. Perfect taper plus 360° roundness at both pitch and crest diameters assure accurate fit. Now available in 1/16" to 1¼" sizes. No increase in price.

Sold only thru leading distributors. Write direct for samples and engineering data on Allen Dryseal plugs, also Allen Tru-Round *Standard* Pressur-Formd plugs for a better seal in normal applications.

WARNING Allen-TYPE screws aren't necessarily Allen-MADE. Be sure to get genuine Allens in the black and silver box.

ALLEN (ALLEN HEAD) MANUFACTURING COMPANY Hartford 2, Connecticut, U. S. A.

▼ BREVITY—Identify by IEN - 12949 If you write the maker ▼

EXAMINE THE DESIGN OF YOUR PRODUCTS AND MACHINES...

no doubt you too can save time–save materials..and increase your profits–by using NATIONAL RETAINING RINGS

These Sure Grip Screw Holding Screw Drivers, made by The Bridgeport Hardware Mfg. Corp., illustrate an obvious and a very simple application of retaining rings.

But there are thousands of other places where they will save—from such simple applications as tools, toys, small parts and small gadgets to complicated heavy duty engines, large drill presses, etc.

And in addition to their economy, they frequently improve your products.

These inexpensive, yet very efficient, artificial shoulders are widely used, and these uses are increasing daily.

It's wasteful to cut down shafts to make shoulders. Redesign to groove smaller shafts and housings and use these high grade steel rings.

Let our engineers consult with you. Send for folders.

Don't pass up this opportunity to increase profits.

THE NATIONAL LOCK WASHER CO.
NEWARK 5, NEW JERSEY MILWAUKEE 2, WISCONSIN
NATIONAL

▼ BREVITY—Identify by IEN - 12951 If you write the maker ▼

FEEDING .. Plow type machine to handle soft sticky materials

Source: PULVA CORP.
548-52 High St., Perth Amboy, N. J.

Plow takes a slice

Motor driven plate mounts a vertical central shaft to carry a material-holding cylinder by means of a spider in this new Com-Rin feeder. The spider supports the cylinder to provide a gap between its lower edge and the plate. A plow is inserted through this gap to shear material from the bottom of a soft sticky mass dumped into the top of the cylinder. Height of the sheared ribbon depends on the clearance between the cylinder and the plate. Width of the ribbon is determined by the position of the plow with reference to the center of the cylinder. The machine will maintain uniform constant feed of materials such as soft clay, filter cake, sludge, pigments, damp salt, fertilizer.

Sizes, subject to specification, will hold any quantity of material from 5 or 10 lb. in the smallest unit, 50 ton in the largest. A typical unit, installed to feed a chemical salt, has a cylinder measuring 4½ ft. in diameter by the same height to hold a charge of 5,000 pounds. Cylinder and plate are driven by a 1-hp. motor at ¾ rpm. The material is discharged at the rate of 1 ton per hour. Construction is normally in carbon steel. Other materials can be specified. Portable or stationary assemblies are available.

▼ BREVITY—Identify by IEN - 12952 If you write the maker ▼

TRUCK .. Platform lift design for skidded loads weighing to 2 ton

Source: RAYMOND CORP.
3584 Madison St., Greene, N. Y.

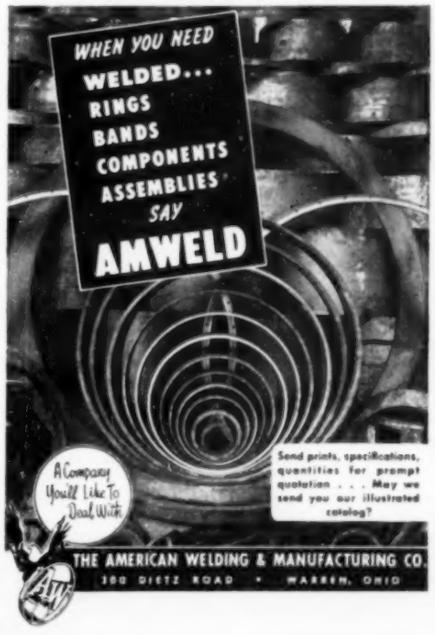
Patented off-set drive

Low-Lift is new design to the company's line of Spacemaker electric trucks, previously described IEN-2150-50. The new unit is similar in design to the one to handle pallets, previously described IEN-8309-51. It employs the original Spacemaker design in which motor connection is to the left rear wheel which constitutes the driving and steering mechanism. The right rear wheel is a swivel caster. The two front wheels are free turning. The arrangement permits turning at a right angle within the truck length for navigation in aisles narrower than the combined length of truck and load.

Three lowered heights, from floor to platform, are 6, 9 and 11 inches. Standard lift movement is through 4 inches. Two platform widths are 18 and 24 inches. Four standard lengths are 30 to 48 inches. The truck is designed for a 12-volt 4/90 amp. hr. battery. Rubber-tired wheels are standard equipment. Travel speed on a level floor is 5 mph. with a rated load, 6 mph. when traveling empty.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

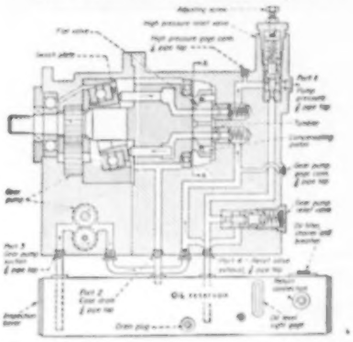
▼ BREVITY—Identify by IEN - 12953 If you write the maker ▼



▼ BREVITY—Identify by IEN - 12954 If you write the maker ▼

HEAVY DUTY HYDRAULIC POWER PUMPS

Pressures to 3000 & 5000 psi



The Oilgear Company announces three new "Fluid Power" heavy-duty constant delivery axial piston pumps. Similar components have been tested and proven in more than 100,000 installations without a single failure on record. Features of these fluid power generators are: patented balanced small flat valves with controlled oil film between working surfaces; patented small one piece rolling pistons; patented quiet reverse flow relief valves; 100% supercharge that minimizes oil compression, prevents air entry and assures quieter operation. These units in pressures up to 3000 and 5000 psi are especially suited to heavy duty pushing, pulling, lifting, lowering and maintaining high static loads on large clamping rams; for use in the iron, steel, metal working, plastic, automotive, rubber, printing, lumber and textile industries. For illustrated descriptive and application data, write for Bulletin 46601. THE OILGEAR COMPANY, Dept. A, 1567 West Pierce Street, Milwaukee 4, Wisconsin.

▼ BREVITY—Identify by IEN - 12955 If you write the maker ▼

Cut Polishing Time Improve Surface Quality

with "LINDE" FINE ALUMINA POWDERS

Obtain superior finishes, free from microscopic pits and scratches in a fraction of the usual polishing time. Use less abrasive and use it directly without levigation and other wasteful preparatory steps. They can also be compounded with waxes and used in stick form.

LINDE Fine Alumina Powders are characterized by ultra-fine, uniform particle size, high purity, and swift polishing action. They have gained wide-spread acceptance in polishing materials ranging from metallographic specimens to gemstones and noble metals.

Call or write any LINDE office and we will be glad to discuss your particular polishing applications.

	Type A	Type B
Chemical Composition	Alpha Al_2O_3	Gamma Al_2O_3
Particle Size (approximate)	0.3 Microns	Less than 0.1 Microns
Hardness (Moh's) (Equivalent to crystalline material)	9	8
Crystalline Structure	Hexagonal	Cubic

The term "Linde" is a trade-mark of Union Carbide and Carbon Corporation.

LINDE AIR PRODUCTS COMPANY
A DIVISION OF UNION CARBIDE AND CARBON CORPORATION
30 East 42nd Street, New York 17, N. Y. UCC Offices in Other Principal Cities
In Canada: DOMINION OXYGEN COMPANY, LIMITED, Toronto

▼ BREVITY—Identify by IEN - 12956 If you write the maker ▼

A REVOLUTIONARY SCREW DRIVER AND NUT SETTER

ARO's new push-button valve means *instant reverse action* . . . no need to remove from work . . . no stopping to turn levers . . . no wasted time.

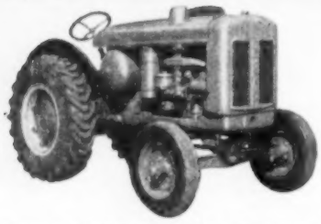
Adjustable clutch (available with positive clutch) Length 7-11/16" . . . outside diameter 1-5/16" . . . weight 1.4 lb.

This outstanding tool must be seen in action to appreciate its amazing action. Write for literature.
The Aro Equipment Corporation, Bryan, Ohio.
Aro Equipment of Canada, Ltd., Toronto

ARO AIR TOOLS Also . . . LUBRICATING EQUIPMENT . . . HYDRAULIC EQUIPMENT . . . AIRCRAFT PRODUCTS . . . GREASE FITTINGS

BREVITY—Identify by IEN - 12957 If you write the maker

Pneumatractor



The Schramm Model 105 Pneumatractor is a self-propelled tractor-compressor combination that fills many requirements, and will . . .

- **PUSH . . . .** Anything a Wheel Tractor will Push
- **PULL . . . .** Anything a Wheel Tractor will Pull
- **POWER . . .** Anything a Wheel Tractor will Power
- **PROVIDE AIR . . .** For Every Compressed Air Job

Write for Bulletin NEU-51

SCHRAMM INC. THE COMPRESSOR PEOPLE WEST CHESTER PENNSYLVANIA

BREVITY—Identify by IEN - 12958 If you write the maker

You CAN'T Go Wrong with Abart SPEED REDUCERS

No two ways about it—Abart Speed Reducers have the stamina to stand up under years of grueling service...whatever the job you may be sure of a dependable, trouble-free performance. Choose from over 75 sizes and types in spur, worm and combinations . . . 1/50 to 168 HP . . . ratios up to 10,000 to 1. Abart Reducers are oil-tight, dust-free, long wearing—made of the strongest materials.

Send now for illustrated catalog showing the complete line of Abart Speed Reducers.

Abart GEAR & MACHINE CO.
4823 WEST 16th STREET • CHICAGO 50, ILLINOIS
Mfrs. of Gears and Speed Reducers

BREVITY—Identify by IEN - 12959 If you write the maker

Send for your copy of this **CATALOG TODAY!**

60 pages of valuable information describing the line of Honeywell Automatic Controls

THE KIND of information you want, right at your finger tips . . . on pneumatic, electric and electronic non-indicating controls for temperature, pressure and humidity.

Catalog No. 8304 is complete and factual...send for your copy today.

Also ask to be put on the mailing list for *Industrial Control News*—a periodical publication devoted to new and unusual applications of automatic controls throughout industry. It is written by and for production and maintenance men.

MINNEAPOLIS-HONEYWELL REGULATOR CO., *Industrial Division*, 4456 Wayne Ave., Philadelphia 44, Pa.

MINNEAPOLIS **Honeywell** Brown Instruments

NEW LITERATURE—Concluded

"Send us your new literature for review"

TRUCKS . . Off-highway trailers, industrial trucks, mine and other cars; illustrated review. Catalog 2, 6 pages. Easton Car & Construction Co., Holly & Liberty Sts., Easton, Pa. **IEN-01584**

TRUCKS . . Hand trucks, trailers, dollies, skids, wheels, casters; illustrated review on types, sizes, dimensions. Bulletin 508-B, 12 pages. Howe Scale Co., 1041 Strongs Ave., Rutland, Vt. **IEN-01585**

TRUCKS . . "Worksaver" electric trucks in tractor, platform, lift types; models, uses. Bulletin P-809, 16 pages. Yale & Towne Mfg. Co., 11002 Roosevelt Blvd., Philadelphia 15, Pa. **IEN-01586**

TUBE FITTINGS . . "Swagelok" units, ¼ to 1 in.; assembly steps, drawings and data on the line, metals. Catalog B-151, 12 pages. Crawford Fitting, 882 E. 140th, Cleveland 10, Ohio **IEN-01587**

TUBES . . Stainless, alloy and carbon steel; list of applications from adding machines to X-ray units. Folder TB-344, 4 pages. Babcock & Wilcox Tube, 4027 Fourth, Beaver Falls, Pa. **IEN-01588**

TUBES . . Stainless steel tubes and pipe; sizes, tolerances, corrosion-resistance data. Chart, "Stainless Tubing", 12 by 9 inches. Carpenter Steel Co., 131-35 Springfield Rd., Union, N. J. **IEN-01589**

VALVES . . Line, blow-off, other valves for boiler service; construction, dimensions. Bulletin E-125, 24 pages. Everlasting Valve Co., 47-51 Fisk St., Dept. 15, Jersey City 5, N. J. **IEN-01590**

VALVES . . Four-way hydraulic operating valves, hand and power operation; drawings, data on 138 models. Catalog 203, 28 pages. Rivett Lathe, 20 Riverview, Brighton 35, Mass. **IEN-01591**

VALVES . . Standard and special cocks, plug valves, swing joints; data summaries. Bulletin 100-A, 12 pages. Rockledge Products Inc., 1428-A Land Title Bldg., Philadelphia 10, Pa. **IEN-01592**

VALVES . . Flanged check valve for 1 to 20-in. pipe lines; operation, dimensions. Bulletin WH-100-1, 4 pages. Williams Gage Co., 1618-26 Pennsylvania Ave., Pittsburgh 33, Pa. **IEN-01593**

VISES . . Universal adjustable vise with 3½ and 5-in. opening; description, application drawings. "3-Way Vise", 6 pages. Universal Vise & Tool Co., 51 Frank St., Parma, Mich. **IEN-01594**

WATER PROOFING . . Silicone-base material for above-grade masonry; properties, application notes. Folder, "Silaseal", 4 pages. Surface Protection, 16802-1 Euclid, Cleveland 12, Ohio **IEN-01595**

WATER TREATING . . Softeners, dimineralizers, filters, degasifiers; condensed review on a line. "Planned Purity", 4 pages. Penfield Mfg., 17-21 High School, Meriden, Conn. **IEN-01596**

WEIGHING . . Electronic scale based on Baldwin SR-4 load cell; basic circuit, operation, examples of use. "Ametron Scale", 4 pages. Streeter-Amet Co., 4103 Ravenswood Ave., Chicago 13, Ill. **IEN-01597**

WELDING . . Alloy electrodes for defense production; properties and applications on 13 types with analysis. Bulletin AR-51-1, 16 pages. Alloy Rods Co., 6505 W. Market St., York, Pa. **IEN-01598**

WELDING . . Connectors, electrode holders, clamps, made by company's "Cadweld" splicing process; details. Catalog, 10 sheets. Erico Products Inc., 2068-72 E. 61st Pl., Cleveland 3, Ohio **IEN-01599**

WELDING . . Application data on company's electrodes for repair and maintenance. "1951 Data File", 150 pages. Eutectic Welding Alloys Corp., 40-42 172nd St., Dept. P, Flushing 58, N. Y. **IEN-01600**

WELDING . . Inert-gas ac. arc-welding machines, 200 to 800 amp.; features, specifications, accessories. Bulletin GEC-773, 4 pages. General Electric Co., Dept. 6X-201, Schenectady 5, N. Y. **IEN-01601**

WELDING . . "Tweco tong" electrode holders, also cable connectors, lugs; specifications, list prices. "Tweco log 8", 12 pages. Tweco Products Co., P. O. Box 666-A, Wichita 1, Kansas **IEN-01602**

WELDING . . Control equipment for resistance welders; assembly of current catalogs. "Resistance Welder Controls", 36 sheets. Weltronic Co., 19456 W. 8-Mile Road, Detroit 19, Mich. **IEN-01603**

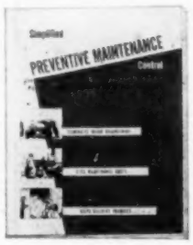
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

BREVITY—Identify by IEN - 12960 If you write the maker

A PAID NEWS ADVERTISEMENT BY REMINGTON RAND INC.

PREVENTIVE MAINTENANCE

—booklet describes simplified low-cost control system



A new booklet describing a highly effective system of preventive maintenance control is offered by Remington Rand.

The system described in this booklet is working successfully for many industrial firms, large and small, in all fields. The booklet shows how to avoid costly down-time, by a near-automatic method of scheduling periodic check-ups, thereby extending the productivity and life of motors, machines, and equipment. Another important benefit: you make deliveries on time . . . build customer good will.

Especially remarkable, the booklet shows how some firms do a *better* maintenance job with *lower* inventories of parts and supplies. You'll see ample evidence too that these desirable results are obtained simply . . . often with less clerical help than is normally needed. A copy of this booklet, KD 449, may be obtained by writing direct to Remington Rand, or by using the Reader Service Form herein.

REMINGTON RAND INC.
Management Controls Library, Room 1557
315 Fourth Ave., New York 10, N. Y.

BREVITY—Identify by IEN - 12961 If you write the maker

SLITTERS AND ROLLWINDERS

For all types and sizes of roll-wound products

From cellophane to sandpaper, from bandages to brake lining, *Camachine* experience leads the way in every field of roll production. There's a *right Camachine* for all types of paper or paperboard; textiles, rubber, foil or plastic; plain, coated, laminated or tacky-surfaced materials. *Camachines* are engineered for dependable, top-quality roll production at record-breaking speeds. For information and literature regarding roll production equipment for any type of material, write to:

CAMERON MACHINE CO.
61 POPLAR ST., B'KLYN 2, N.Y.

Camachine
First in roll production equipment

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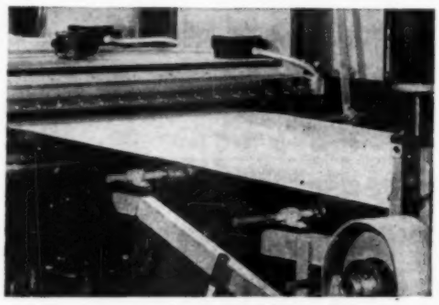
WORLD'S FASTEST HEAT FOR CURING SYNTHETIC COATINGS



coat, dry and cure up to 32 dry ounces *in one pass* with FIBRE GLASS SUPER-HEATERS

No method, no system, no machine now in use is comparable to Fibre Glass Super-Heaters for curing resin coatings.

- Heat penetration makes 10, 20, 30 gauge coatings *in one pass* an everyday operation.
- Coatings are not skin dried or blistered when drying or curing with black radiant heat.
- Super-Heaters usually do in 12 to 15 feet the work done by a 100 foot convection system—thus saving valuable floor space.
- Coatings are dried and cured uniformly because heat is uniform over *every square inch* of heater surface.
- Temperatures up to 700° F. provide the top heat required for curing 99% of today's resins.
- Temperatures are pin point controlled within + or − 5°.
- A special heat exhaust insures a completely negative system, far safer than enclosed systems.

INDUSTRIAL RADIANT HEAT CORPORATION
SILL INDUSTRIES — *distributor*
51 MADISON AVENUE, NEW YORK 10, N. Y.
Representatives in
CHARLOTTE • CHICAGO • PROVIDENCE

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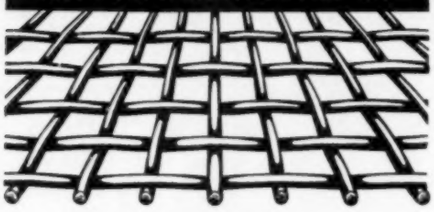
CAL-WIC WIRE CLOTH



meets all STANDARD and SPECIAL requirements

Either as original equipment or for specialized uses in filtering, screening, grading, cleaning or processing, Cal-Wic Wire Cloth is available in the right weave, mesh and weight to give you long-wearing, dependable service.

Made in different types of metals and alloys for high resistance to chemical action, corrosion, abrasion and temperature extremes.

For additional information write or phone our nearest sales office.

THE COLORADO FUEL & IRON CORPORATION – Denver, Colorado
THE CALIFORNIA WIRE CLOTH CORPORATION – Oakland, California
WICKWIRE SPENCER STEEL DIVISION – Clinton, Massachusetts

CAL-WIC INDUSTRIAL SCREENS CFI
THE COLORADO FUEL AND IRON CORPORATION

▼ BREVITY—Identify by IEN - 12965 If you write the maker ◁▷▼

Don't let plant wiring projects snarl production

Graybar service *can* help you reduce down time and eliminate snarled production schedules while plant wiring projects are in progress. Schedule ahead—order *all* of the electrical materials for your next job from this friendly all-inclusive source.

Graybar has had years of experience in planning all types of wiring installations—experience that means savings to you in meeting the particular requirements of any job. We distribute over 100,000 different electrical items through a nation-wide network of strategically-located offices and warehouses. Every item is a quality product of a leading manufacturer . . . and when your order is *via Graybar* you can always expect the *fastest possible* service.

If shortages exist in the items you need, we will work with you or your electrical contractor to select practical alternate materials and arrange for realistic delivery schedules.

Planning aid on wiring systems—as well as in the fields of lighting, communication, ventilation and power—is readily available through your near-by Graybar office—as near to you as your phone. The recommendations of a Graybar Specialist, supplementing those of your local Graybar Representative, will help to accelerate your project schedule from start to finish. 1C1-1212

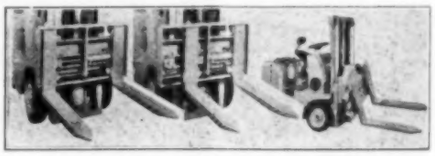
GRAYBAR ELECTRIC COMPANY, INC.
Executive Offices: Graybar Building, New York 17, N. Y.

Get convenience, service, reliability . . . via GraybaR
IN OVER 100 PRINCIPAL CITIES

▼ BREVITY—Identify by IEN - 12967 If you write the maker ◁▷▼

TRUCKS . . Fork attachments for side shifting, clamping and roll over

Source: BAKER-RAULANG CO.
1248-52 W. 80th St., Cleveland 2, Ohio



Hydraulic movements, operator controlled

Adaptability is improved by application of either of two new fork assemblies which the company has developed for use as attachments on its 1 and 2-ton fork-lift trucks. One attachment, shown to the left and in the center of the illustration, employs a hydraulic cylinder with chain connection to the fork and slide assembly of the forks themselves. They can be brought together or spread apart in a positioning or load clamping arrangement. Then, after changing the position of a small stop, they can be moved together to either the right or the left by operating a control at the driver's position. A load can be shifted laterally to handle it in close quarters.

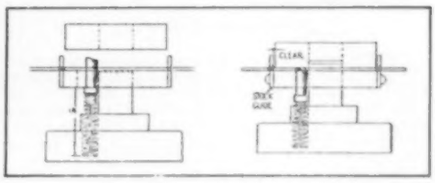
Fork movement is through 17 in. in the clamping action from a maximum spread of 36, 42, or 48 inches. Lateral movement is through 8½ in. maximum from a spread measuring 27½, 33½ or 39½ inches. Fork length in all cases is standard at 36 inches.

The rotating assembly, to the right in the illustration, also employs hydraulically-operated lateral fork movement so a load can be picked up, inverted and also the forks can be employed in a side-gripping action for load lifting and handling. This assembly is known as the Rollover-Clamp. It is designed particularly for the company's 2-ton truck to handle loads to 48 in. in length and to 2,400 lb. in weight.

▼ BREVITY—Identify by IEN - 12968 If you write the maker ◁▷▼

PRESS TOOL . . Insert work stop controls material feed through a die

Source: LA ZUR MFG. CO.
51 Industrial Ave., Lake Zurich, Ill.



Promotes fast feed

Steel pin, compression spring and trigger spring make up the assembly of this new work stop for insert assembly in a press die. The compression spring seats in the die and the pin rides through a hole in the punch with the trigger spring. When work is passed through its guides and against the pin the tripper spring recedes into a slot. When the die descends, striking the top of the pin and pushing it down flush with the top of the work, the trigger spring slips out and holds the pin down until the die returns upward.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 89

▼ BREVITY—Identify by IEN - 12969 If you write the maker ◁▷▼

FROM GRID TO GRIDDLE
Name Your Product . . .

RAYTHEON WELDPOWER* UNITS

Will Weld Any Small Part Better, Faster, At Lower Cost

*Reg. U. S. Pat. Off.

Raytheon Condenser Weldpower Control Units, complete with Model G Weldpower Head, are available in 63, 225 and 1080 watt-second capacity.

From vacuum tube grid caps to fishing rod parts, there's a job for Raytheon *Weldpower* in your precision assembly set-up. Learn the many advantages of joining ferrous, non-ferrous or dissimilar metals by this newest and best resistance welding method. Difficult, even "impossible", jobs become easy, fast, economical.

Write for complete information. Address Dept. IN-12.

RAYTHEON
Excellence in Electronics
RAYTHEON MANUFACTURING COMPANY
WALTHAM 54, MASS.

▼ BREVITY—Identify by IEN - 12970 If you write the maker ◁▷▼

Scrub Your Voice, Sir?

Gray Mfg. Co. Employs FULLERGRIPT BRUSHES on Gray VoicEraser

The Gray VoicEraser smooths out, by the scientific application of heat, the Vinylite discs used on the famous Gray Audograph.

Fullergript brush rolls are an integral part of the VoicEraser. Two Fullergript brushes scrub the discs as they run through a detergent bath. A third holds the disc from below as it passes under the heated roller and also cleans the roller between the passage of discs.

Fullergript was selected for the Gray VoicEraser because of its continuous construction and because its metal back-bone would not warp. The versatility of Fullergript may be the answer to *your* brushing problems. Just write to . . .

FULLER BRUSH — FULLERGRIPT — At home . . . in business, too

THE FULLER BRUSH COMPANY
INDUSTRIAL DIV., 3583 MAIN ST., HARTFORD 2, CONN.

▼ BREVITY—Identify by IEN - 12971 If you write the maker ◁▷▼

Cut Your Downtime *on mill roll changing* ***to 1 Minute or Less*** *with the* ***NEW B&S***

SHAFTLESS BACKSTAND

Money-consuming downtime on mill roll changing is cut to the bone by the wholly automatic B & S Shaftless Backstand. Here is what Mr. C. Carr Sherman, President of H. P. Smith Paper Co., has to say about this equipment:

"The engineering of this new unit indicates a fine understanding of the problems of the users of this type of equipment. The Backstand is much easier to handle as there are no shafts. It is also much easier and faster to make changes on it. I believe that changing rolls with this Backstand can be brought down to well under one half minute."

You may purchase the B & S Shaftless Backstand with or without the new B & S Slitter and Rewinder. The Backstand may be used on any type of rewinding equipment, as well as on waxing and laminating machinery, printing presses, etc.

For full details on the Shaftless Backstand and the new B & S Slitters and Rewinders, write to The Bagley & Sewall Company, 500 Fifth Avenue, New York 18, N.Y.

THE B & S
#55 SHAFTLESS BACKSTAND
features automatic tension and side register control; motor for raising and lowering mill roll arms, also motor for moving the arms to accommodate different width rolls. Entire working mechanism is totally enclosed.

BAGLEY & SEWALL
WATERTOWN, NEW YORK
designers and builders of QUALITY MACHINERY SINCE 1853
500 FIFTH AVE., NEW YORK 18, N. Y.
Foreign Representative: CASTLE & OVERTON, INC., 630 Fifth Avenue, New York 20, N. Y.

BREVITY—Identify by IEN - 12973 If you write the maker

Have You Considered H & K PERFORATIONS

. . . to answer the problems of eye appeal or ventilation or drainage or acoustical correction, or to provide a satisfactory material to screen, grade or guard your product.

H & K Perforations are furnished in a wide range of sizes, shapes and spacings in all currently available metals and nearly all plastics which are obtainable in the form of plates, sheets and coils.

We can perforate sheets to special sizes and form, weld and otherwise fabricate to your specification.

Tell us your needs and let us make recommendations and quote you prices.

Our catalog No. 62 will be promptly sent upon request.

The Harrington & King Perforating Co.

5637 FILLMORE ST., CHICAGO 44, ILLINOIS
114 LIBERTY STREET, NEW YORK 6, N. Y.

BREVITY—Identify by IEN - 12974 If you write the maker

LOCALITES for Better Light ON the Job

Directs Light Exactly Where Needed as Easily as Pointing Your Finger

Designed Especially for Machine Tools, and Work on Assembly and Inspection Benches

MODEL 3267-H-174

Overall length 32¾". Three instantly adjustable joints. Flat oblong base for machine screw mounting

$6.12 EACH in pkg. of 6 Single Units **$7.65 ea.**

- **Rugged Construction** to stand strains and shocks
- **Instantly Adjustable** with full swivel ball and socket joints
- **Infra-red Baked Enamel Finish** — Exterior, Wrinkled Gray — Reflector Interior, high temperature White
- **Reflector** accommodates 100 watt A-21 medium screw base lamp
- **Wired Complete** with switch socket and 8 ft. oil resistant cord

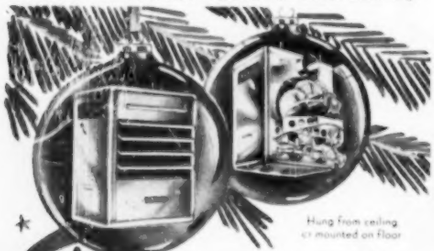
WRITE FOR COMPLETE CATALOG of Localite models with various type reflectors, arms and bases for every industrial use.

THE FOSTORIA PRESSED STEEL CORPORATION
FOSTORIA, OHIO

Localites are available through selected distributors everywhere.

LOCALITE fostoria for Light ON the Job

BREVITY—Identify by IEN - 12975 If you write the maker



Hung from ceiling or mounted on floor

It pays to modernize with REZNOR mechanized heating

Fully automatic machines that produce and distribute heat at the point-of-use with greater efficiency. Reznor units install easier, faster and with less cost. The complete answer to your modernization heating needs to give you more usable space while balancing temperatures automatically. See how Reznor units fit your plans . . . Write for Catalog U-50.

World's largest selling gas unit heater

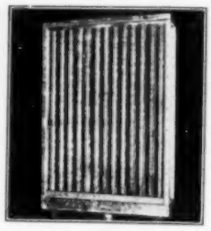
REZNOR MANUFACTURING CO.
10 UNION ST. - MERCER, PENNA.
Send me 20-page catalog in full color

Name _____
Firm _____
Address _____
City _____ Zone _____ State _____

BREVITY—Identify by IEN - 12976 If you write the maker

HEATING . . Finned tube unit assembles in duct, freeze proof design

Source: INDUSTRIAL MFG. & ENGINEERING CO.
3847 N. Ravenswood Ave., Chicago 13, Ill.



For space or process

Steam connects at a threaded opening in the bottom center of a double compartment header in the base of this new finned-tube heating unit. The steam flows upward through vertical ⅝-in. pipes located inside the outer 1-in. finned pipes. These latter units are plugged at their upper ends and connect at the bottom into the upper compartment of the headers for flow to the bottom outlet near one end. Steam entering the header passes upward through the inner tubes, then turns to return downward in the form of steam and condensate to the outlet connection.

Since both the inner and outer pipes are secured to the header at only one end there is no strain due to expansion or contraction. At the same time the steam passing through the inner pipe keeps the outer one warm to eliminate freezing.

Construction can be specified in standard steel pipe with steel fins or admiralty metal tubes and steel fins. The header is made of welded-steel plate. Face lengths range from 24 to 72 inches. Face width is 24¼ to 43¼ inches. Pipe connections are for 1, 2 or 3 rows in depth.

BREVITY—Identify by IEN - 12977 If you write the maker

PROCESSING . . Heat exchanger for pastes, powders, pulps, slurries

Source: WESTERN PRECIPITATION CORP.
1014-18 W. 9th St., Los Angeles 15, Calif.

Materials flow continuously

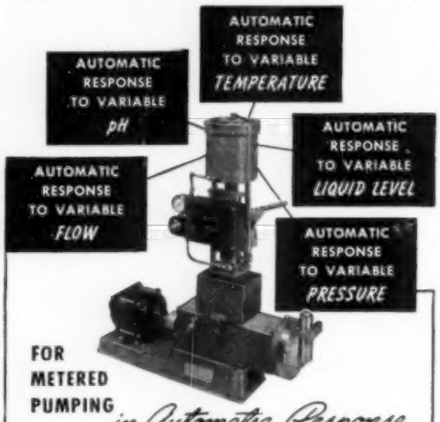
Holo-Flite trade names a new screw-type heat exchanger in which the heat-transfer agent is circulated through the hollow flights and shafts of the screws. The product flows in a trough where it is rotated into, around, over and under the screw surfaces. The resulting action is continuous mixing, turning, folding that presents new areas in contact with the heat-exchange surfaces in an effective gentle action.

The equipment can be employed for either heating or cooling. It is available with two or more intermeshing screws in trough lengths from 8 to 20 ft. with screw diameter ranging from 7 to 16 inches. Four or six screws can be assembled in a single trough and several trough assemblies can be mounted, one upon another, for a central motor drive at 1 to 12 rpm.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

FIND WHAT YOU WANT?
Hundreds of products are indexed on page 110

BREVITY—Identify by IEN - 12978 If you write the maker



FOR METERED PUMPING *in Automatic Response* **TO VARIABLE PROCESS DEMAND**

WRITE for complete description and specifications. Lapp Insulator Co., Inc., Process Equipment Division, 472 Maple St., LeRoy, N. Y.

Lapp *Auto-Pneumatic* **PULSAFEEDER**

PISTON-DIAPHRAGM CHEMICAL PROPORTIONING PUMP

BREVITY—Identify by IEN - 12979 If you write the maker

Left—Style 14500 R Suspended Head Bag Closing Machine. Hang it up any place!

NOW! EFFICIENT BAG CLOSING FOR SMALL PLANTS

HERE is the popular, economical Union Special Suspended Head Bag Closing Machine that offers many plants an excellent solution for handling varying volumes of work. Check these features: Easily installed anywhere in your plant with overhead pulley and counterweight or top balancer! Built-in motor, thumb-controlled clutch, and automatic brake! Plug it in and go to work! Adaptable to fabric or paper bags of various sizes!

SEND FOR THIS NEW BULLETIN!

Get your copy of this 16 page illustrated bulletin containing helpful data and charts on the complete Union Special line of bag closing machines. **UNION SPECIAL MACHINE COMPANY, 410N. Franklin St., Chicago 10, Ill.**

UNION SPECIAL

BREVITY—Identify by IEN - 12980 If you write the maker

For Lubricating Devices Call On GITS First!

GITS Bros. covers the *entire range* of lubricating devices: Oil Hole Covers, Oil Cups, Grease Cups, Bottle Oilers, Gauges. Gravity-Feed, Wick-Feed, Constant Level, Vibrating Rod styles. Threaded or Drive-type. Elbow or Straight.

GITS Bros. offers the most complete selection of standard styles.

GITS consistent quality in design, materials and machining has made Gits Lubricating Devices the standard for industry for more than 40 years.

GITS Lubricating Devices are far-famed for solving tough oiling problems at low cost.

GITS Bros. Engineering Staff—true specialists in lubrication engineering—is at your disposal.

Write today for free illustrated Price Guide Catalog. Use it as your handy reference for lubricating devices.

GITS BROS. MFG. CO.

1854 S. KILBOURN AVE., CHICAGO 23, ILL.

BREVITY—Identify by IEN - 12982 If you write the maker

WESTERN FELT:

Your Insurance Against Complaints

Felt is not "just felt." There is a vast difference in its manufacture and efficiency. Because Western Felt for over fifty years has not, and will not, depart from its policy of maintaining the highest possible quality in material and manufacture, its products wherever they may be employed, are your insurance against product complaints due to a Western Felt component part. It ranges from wool softness to rock hardness—never loses shape—does not ravel or fray—resists oil, water, heat, age—resilient, flexible, compressible—may be cut to extremely close tolerances—unsurpassed in uniformity. 102F

WESTERN FELT WORKS
4035-4117 Ogden Avenue, Chicago 23, Illinois
BRANCHES IN ALL PRINCIPAL CITIES
Largest Independent Manufacturers and Cutters of Wool, Hair and Jute Felts

BREVITY—Identify by IEN - 12983 If you write the maker

INCREASE production with these 3 Commander PRODUCTION TOOLS

1

Adjustable MULTI-DRILL

★ Drills Up to 8 Holes At 1 Stroke
★ Adjustable to Any Hole Pattern
★ Fits Any Drill Press

You can drill 2 to 8 holes at one stroke of a MULTI-DRILL equipped drill press. Instantly and easily adjusted to any hole pattern . . . compact in design and ruggedly built for years of service, thousands of MULTI-DRILLS are cutting costs and increasing output up to 800% wherever metal, wood or plastics are drilled.

2

Commander TAPPER

★ 1 Tapper Handles Taps #0 to ¾"
★ Automatically Sensitive... Any Operator Can Do Precision Tapping
★ Fits ANY Drill Press

The Tapper that "Thinks for the Operator"

Commander Tappers "think for the operator"—automatically stop when taps are dull, overloaded, or when they strike bottom in blind hole tapping—permit faster tapping, better work, even with inexperienced operators. Torque control provides positive tap protection from #0 to ¾" . . . spring clutch eliminates slippage, assures smooth, quiet, easy operation.

3

ORDINARY CHIPS

Commander DRILL CHIP BREAKER

Gives you reduced drilling costs because you get:

★ Faster Drilling—Drill Speeds increased 100% or more.
★ Deep Holes—8 to 20 times drill dia.
★ Accurate Holes ★ More Holes per hour
★ More Holes per grind

CHIP BREAKER CHIPS

Commander Drill Chip Breakers are equipped with Morse Taper Drivers and ½" chucks.

Write for illustrated Circulars on Commander Production Tools. Your nearby Commander Distributor carries the full line — write for his name.

Commander MFG. CO.
4219 W. KINZIE ST. • CHICAGO 24, ILL.

Products of *Commander* . . . Builder of Production Tools

BREVITY—Identify by IEN - 12985 If you write the maker

LATHE . . Automatic turret design swings 49 in. over base, 75 hp. drive

Source: PRATT & WHITNEY DIVISION
49 Charter Oak Blvd., West Hartford 1, Conn.

Powered for carbide tools

Model 10-U is a new large capacity machine in the company's Potter & Johnston line of automatic turret lathes. It is driven by a 75-hp. motor connecting by means of V-belt and a clutch so the motor can operate continuously. The machine also mounts a brake for quick stopping. Equipment includes electro-magnetic control, air-operated chuck, centralized control station to operate the chuck and the various machine functions. The gearing is hardened and ground. The design is made particularly to provide easy access to the work, the machine and the controls.

Individual cross-slides at the front and rear operate from separate timing boxes, can be controlled independently or simultaneously with the movement of the turret slide. The front and rear slides and selector tools can be positioned to work from the rear and on the face of the work piece at the same time the turret tools are machining.

Travel of the cross slides is fixed at 8½ inches. Distance from spindle to turret is minimum at 30 in., maximum at 50 inches. Distance center to center between the 5-in. base ways is 31 inches. Spindle-speed range is 11 to 248 rpm. Floor space measures 18 by 10 feet. Weight is about 37,000 pounds.

BREVITY—Identify by IEN - 12986 If you write the maker

GAGES . . Mobile assembly carries master test equipment to shop

Source: DOALL CO.
252-56 N. Laurel Ave., Des Plaines, Ill.

Gages the gages

New assembly of the company's mobile inspection cabinet, previously described IEN-2264-44, has been added to the original larger unit. It is designed to be moved from machine to machine to inspect gages and fixtures at each machine. The cabinet carries the inspector's tools and measuring instruments in a wheel-mounted assembly measuring 28 by 18 by 37 inches.

It is made of welded steel with a pressed-wood top surrounded by a ledge and mounts five drawers and an adjustable lighting fixture. A 25-ft. extension cord is wound on a spring reel for connection to a power source. Receptacles in the circuit provide a means to plug in the electrical instruments. Equipment to stock the cabinet is subject to specification.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 12987 If you write the maker

Head and Shoulders Over Oily Rust Preventives
FOR INDOOR RUST PROTECTION

STEELGARD

Add a small amount of STEELGARD to any tap water to make a powerful rust preventive for indoor applications replacing ordinary oil and grease type preventives.

Made in several different grades, STEELGARDS give a flexibility heretofore not practical in ordinary rust preventives. For example, no matter what type of film is required, be it completely dry, waxy, oily, hard, invisible, easily soluble or water soluble only once, there is a STEELGARD to meet the requirement. Treated surfaces may be wet or dry when the STEELGARD is applied with identical results, and the water thin consistency of the STEELGARD solution will assure complete and even coverage of the treated parts. Some grades of STEELGARD combine the features of a rust preventive and a water soluble solvent; others combine in a single product a rust preventive and a drawing lubricant.

In every case only one application is necessary.

For the complete story of STEELGARD, write us for details.

Haas MILLER Corp.
4th & BRISTOL STS. • PHILA. 40, PA.

BREVITY—Identify by IEN - 12988 If you write the maker

PROVIDING THE FASTEST, MOST ECONOMICAL METHOD KNOWN FOR CONNECTING AND DISCONNECTING PRESSURIZED FLUID-CARRYING LINES

Aeroquip
SELF-SEALING COUPLINGS

AEROQUIP CORPORATION
JACKSON, MICHIGAN

FLEXIBLE HOSE LINES; DETACHABLE, REUSABLE FITTINGS; SELF-SEALING COUPLINGS; "BREAKAWAY"; HYDRAULISCOPE

BREVITY—Identify by IEN - 12989 If you write the maker

CASTELL LOCKTITE HOLDER AND IMPORTED LEAD
—the "team" that simplifies your drawing and designing

REFILL DRAWING PENCIL
(black or colored)

Patented clutch holds lead in grip of iron. With push-button release, your fingers never touch the lead. Prevents slipping, smearing, smudging.

No. 9030 CASTELL REFILL IMPORTED Drawing Leads Degrees 7B to 9H

Perfect for LOCKTITE and usable in all other standard holders. Also available in red, blue, green, yellow, carmine, orange, white and silver.

AW FABER-CASTELL PENCIL COMPANY, INC.

BREVITY—Identify by IEN - 12990 If you write the maker

Control Costs with

COUNTING SCALES

Toledo's *complete line* of Counting Scales gives you the right model for *accurate cost control* in a wide range of jobs! For issuing pre-determined quantities of uniform parts . . . counting unknown quantities . . . for *faster inventory counts* . . . or to get accurate receiving, shipping, production, cost and piece-work counts. Complete selection of models . . . for parts weighing only a few grains . . . up to total counting capacities of several tons. Also choice of double and triple ratio combinations. Send for booklet 2204. Toledo Scale Company, Toledo 12, Ohio.

TOLEDO
HEADQUARTERS FOR SCALES

BREVITY—Identify by IEN - 12991 If you write the maker

NEW Deming SUMP PUMPS

● These new Deming Sump Pumps are designed for trouble-free service, easy maintenance and long life.

Features include heavy-duty construction, close tolerance dowel-ring fits from motor to impeller, positive alignment of all rotating and guide bearing parts, column connections flanged and bolted for easy maintenance.

Pumps can be furnished in cast iron, bronze, Monel and stainless steel. Sizes range from 1 to 10 inch discharge with capacities from 10 to 3000 G.P.M., and heads up to 140 ft.

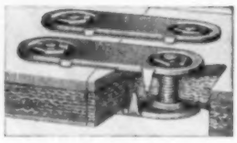
Complete details, selection tables, and accessories are illustrated and explained in new Bulletin No. 4600-A. Write for a copy.

THE DEMING COMPANY
521 Broadway • Salem, Ohio

BREVITY—Identify by IEN - 12992 If you write the maker

FLEXCO® BELT FASTENERS and RIP PLATES

FOR HEAVY CONVEYOR AND ELEVATOR BELTS OF ANY WIDTH



Compression Grip distributes strain over whole plate area

★ FLEXCO Fasteners make tight butt joints of great strength and durability.
★ Trough naturally, operate smoothly through take-up pulleys.
★ Distribute strain uniformly.
★ Made of Steel, "Monel," "Everdur." Also "Promal" top plates.
★ FLEXCO Rip Plates are for bridging soft spots and FLEXCO Fasteners for patching or joining clean straight rips.

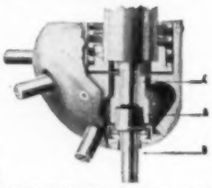
Order From Your Supply House. Ask for Bulletin F-100

FLEXIBLE STEEL LACING CO.
1010 Lexington Street • Chicago 44, Ill.

BREVITY—Identify by IEN - 12993 If you write the maker

MORE HOLES PER HOUR—PER DOLLAR

Increase production of any standard drilling machine by adding a Lign-o-matic, the only drill turret with the patented, self-centering principle that guarantees sustained accuracy equal to the drilling machine itself.



FOR ALL CONSECUTIVE DRILL PRESS OPERATIONS

PROVED PRODUCTION INCREASE — Turret indexes faster than tools can be changed or work moved to another spindle. A single Lign-o-matic will release 5 drilling machines for other work and still show increased production and reduced costs on original job.

VERSATILITY—Fits any standard drilling machine without altering the machine. Handles operations such as drilling, reaming, counterboring, and tapping (on reversible spindle machines), up to ½" diameter in any material.

PRECISION — Patented, self-centering tapered drive (A) automatically locks turret spindle (B) into exact alignment with drilling machine spindle (C) for sustained accuracy.

GUARANTEE — May be returned in 10 days for any reason for full refund of purchase price. Two-year guarantee against defective parts.

PRICE — Model D, 6 spindles with No. 2 Jacobs male taper $235.00
Chucks extra at established prices.

DELIVERY — Currently, 2 weeks.

☐ Please rush ..... Lign-o-matic turrets for
(drill press make) ..... (size) .....
(quill dia.) ..... (spindle taper) .....
My name .....
Title .....
☐ Please send literature on Lign-o-matic turret.
(Attach coupon to company letterhead)

HOWE & FANT, INC.
524 FLAXHILL RD., SO. NORWALK, CONN.

BREVITY—Identify by IEN - 12994 If you write the maker

CALCULATING . . Slide rule to figure metal cutting speeds, feeds

Source: GISHOLT MACHINE CO.
1243-47 E. Washington St., Madison 10, Wis.

Yours for $3

Time Computor Model M is a new slide-rule type of calculator for use by process engineers, time-study men, production estimators. It covers a range of spindle speeds from 5 to 5,000 rpm. and feeds from 0.001 to 1.0 ipm. in connection with metal cutting operations. Scales include cutting speeds in fpm., work diameter from ⅛ to 100 inches, spindle speed in rpm., length of cut from ⅛ to 100 inches, feed in ipr., time per piece in minutes. Instructions are on the slide. Length is 10 inches.

BREVITY—Identify by IEN - 12995 If you write the maker

ADHESIVE . . Synthetic glue for wood assemblies, thins with water

Source: THOMAS W. DUNN CO.
Pearl & Dover Sts., New York 7, N. Y.

Can be thinned with water

Wood-Hesive is a new synthetic emulsion glue that will withstand repeated freezing and thawing without adversely affecting ability to perform in making wood assemblies. It can be employed as received without need to blend, mix or heat. It is uniform from one batch to the next. It will not stain the wood on which it is applied.

Clamp time is about 30 min. for soft woods, 3 hr. for hard wood. Shear strength tests at about 2,300 lb. after 24 hr., 3,500 lb. at the end of 72 hours.

BREVITY—Identify by IEN - 12996 If you write the maker

TRUCK . . Hand lift design for single or double pallets to 1 ton

Source: PLANT EQUIPMENT CO.
2511 Fifth Ave., Rock Island, Ill.

$195 to $225

Pal-It trade names a new hand-lift truck made of steel in welded assembly and equipped with roller-bearing wheels. It is available with fork length to 48 in. to handle single or double-faced pallets with loads to 1 ton. A single stroke of the steering handle lifts the load into carrying position where it locks until it has been released by the operator.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 12997 If you write the maker

250-watt WELLER Gun

Does All Types of Soldering! Heavy jobs —light jobs. The Weller Soldering Gun WD-250 does *both* with the same ease and efficiency. Saves time on every job. Cuts current costs. Your Weller Gun pays for itself in a few months.

5-SECOND HEATING. Pull trigger and you solder. No waiting. No wasted current.

RIGID-TIP. Chisel shaped and braced for heavy duty. Larger soldering area and faster heat-transfer speed work.

LONGER REACH. Gets between wiring and into the tightest spots easily.

SOLDERLITE. Prefocused spot-light lets you see what you're doing all the time.

TRIGGER-SWITCH CONTROL. No need to unplug gun between jobs. Heat goes off when you release trigger.

DUAL HEAT. Single heat 200 watts; dual heat 200/250 watts; 120 volts, 60 cycles.

SOLDERING GUIDE Get your pocket-copy of "Soldering Tips"—revised, up-to-date and fully illustrated, 20-page booklet of practical soldering suggestions. Price 10c at your distributor or order direct.

WELLER ELECTRIC CORP.
823 Packer Street • Easton, Pa.

BREVITY—Identify by IEN - 12998 If you write the maker

Meet every test in copper line service

JENKINS Solder-End VALVES

Easy to install — accurate fit to tubing
Positive control — will not distort under intense heat of soldering
Lasting economy — designed with an extra measure of endurance to withstand unusual strain in operation

SEND FOR THIS NEW FOLDER

Describes complete line of Jenkins Solder End Valves, gives dimensions, and instructions for installation. Ask your Jenkins Distributor for Form 198, or write for your copy today. Jenkins Bros., 100 Park Ave., New York 17.

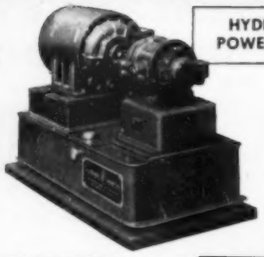
LOOK FOR THIS DIAMOND MARK

JENKINS VALVES SINCE 1864

BREVITY—Identify by IEN - 12999 If you write the maker

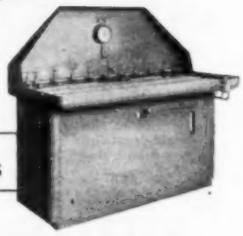
SUPERDRAULIC

PUMPS • VALVES • TRANSMISSIONS • REMOTE CONTROLS



HYDRAULIC POWER UNITS

ENGINEERING FABRICATING

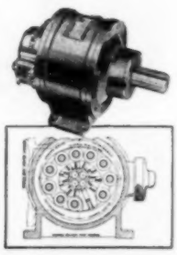


HYDRAULIC TEST STANDS

Let SUPERDRAULIC Engineers do the job for you

● Our specialized engineering and manufacturing knowledge is available to you for the designing and production of your power units and test stands. Superdraulic designs take into consideration every requirement and limitation of your job. Units can be furnished complete in every detail including motors, pumps, valves, reservoirs, etc.

FAMOUS SUPERDRAULIC HIGH PRESSURE PUMP



Develops up to 60 H.P. at 5,000 P.S.I. Let us quote on your requirements.

Superdraulic CORPORATION
14256 WYOMING AVE. • DETROIT 4, MICH.

▼ BREVITY—Identify by IEN - 13001 If you write the maker ▲▼

Hamilton Ideal Drawing Table

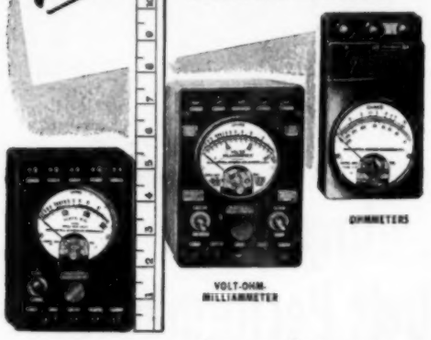
Exceptionally rigid construction and simple, speedy slope and height adjustment make the *Ideal* a drafting room favorite from coast to coast. Available in six top sizes from 31" x 42" to 43½" x 84". Contact your Hamilton Dealer today for complete specifications, ordering and delivery data.

HAMILTON WORK-DESIGNED DRAFTING EQUIPMENT

Hamilton Manufacturing Company
TWO RIVERS, WISCONSIN

▼ BREVITY—Identify by IEN - 13002 If you write the maker ▲▼

VERSATILE Pocket Size INSTRUMENTS



—for maintenance
—for product testing

Extremely compact, yet packed with values for broad flexibility in service, these popular WESTON testers are favorites for checking electrical components . . . for production line testing . . . and for final inspections. Ideal for maintenance, too, because they offer true WESTON dependability and ruggedness in convenient size. Available now in limited quantities through your local WESTON representative, or, WESTON Electrical Instrument Corporation, 603 Frelinghuysen Avenue, Newark 5, New Jersey.

VOLT-OHMMETER—MODEL 564
Ranges—3/30/300/600 volts d-c (1000 ohms per volt).
Resistance—Full scale 1000/10,000/100,000/1,000,000 ohms.

VOLT-OHM-MILLIAMMETER—MODEL 697
Ranges—0-7.5/15/150/750 a-c and d-c (1000 ohms per volt).
Current—0-7.5/75 milliamperes d-c.
Resistance—Full scale 5000/500,000 ohms. Center scale 35/3500.

OHMMETERS—MODEL 689
Ranges—Type 1-E—double range 0-5000 and 50,000 ohms, full scale.
Type 1-F—double range 0-10 and 0-1000 ohms, full scale.

WESTON Instruments

▼ BREVITY—Identify by IEN - 13004 If you write the maker ▲▼

CONTROL . . Electronic equipment protects against mechanical overload

Source: BRINNELL CO.
51 Thomas St., Simsbury, Conn.

Needs no rest, no relief, no lunch

New assembly of the company's Protectron electronic equipment, previously described IEN-9045-47, is now available for application on two machines working together or in sequence as compared to the previous single-machine equipment. An overload on either machine will cause both to shut down so no damage can occur to either one and no crowding can take place between them. The equipment consists of a main control assembly with primary and secondary sub-assemblies, each housed in a metal enclosure. Adjustments for given conditions are made at the main assembly.

Any small increase of input current to the motors driving the machines, over a predetermined current input, is detected and employed to actuate the control action. This increase may be due to over-loading the drive as in operation of dull tools, attempt to feed over-sized stock through a restricted opening, pile-up on a conveyor line, failure of one machine to take material sent to it by a preceding one.

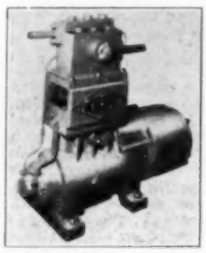
Resulting action is to shut the motors down by opening their control circuits, disengaging clutches, applying brakes. Signal lamps and audible warnings can be sounded also.

Operation is on 220/440-volt, 60-cycle ac. with motor current ranging from 1 to 5 amp. and from 5 to 10 amperes. Other ratings can be specified to meet requirements.

▼ BREVITY—Identify by IEN - 13005 If you write the maker ▲▼

PUMP . . Triplex hydraulic, integral motor, to 5,000 lb., 60 gpm.

Source: KOBE INC.
3038 E. Slauson St., Huntington Park, Calif.



For 24 hour duty

The motor driving this new pump is flange mounted at one side and is connected to the pump through gears that can be set up for a variety of ratios. The pump is equipped with interchangeable plungers and liners for desired combinations of volume and pressure. The assembly employs spring-loaded balls riding on hardened and ground seats at both inlet and outlet. Lubrication is provided by a built-in pump for continuous circulation.

Three assemblies in the line take 15, 30 and 50-hp. motors for pressure rating to 5,000 lb. and displacement to 60 gpm. In addition the company is prepared to supply special heads for pressure to 10,000 and to 20,000 lb. when greater pressures are desired.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 13006 If you write the maker ▲▼

IT'S ALLIED FOR RCA

electron tubes for industry

ALL TYPES IN STOCK
- Vacuum Power
- Thyratrons
- Vacuum & Gas Rectifiers
- Ignitrons
- Cold-Cathode
- Phototubes
- Oscillograph Tubes
- Camera Tubes
- Monoscopes
- Special Types

Quick, Expert Service on all RCA special-purpose industrial tubes

ALLIED maintains in stock *for quick shipment*, the world's largest distributor inventory of RCA special-purpose tubes—*of all types*. We specialize in supplying the needs of industrial, broadcast, governmental and other users. To save time, effort and money—phone, wire or write to ALLIED for *quick* shipment. Fill *all* your needs from the *complete, dependable* electronic supply source.

FREE Interchangeability Directory

Valuable guide to selection of proper RCA tube type replacements. Lists 1600 tube types. Write for Free RCA Guide No. 37-046.

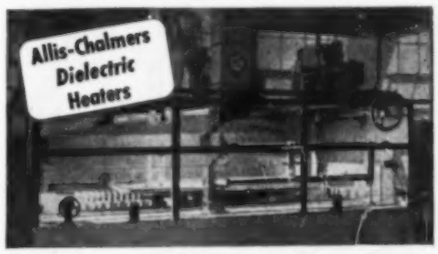
see your 1952 ALLIED catalog

Refer to your ALLIED Catalog for *all* electronic supplies—parts, tubes, test instruments, tools, audio amplifiers, accessories—available from the world's largest stocks. Write today for your FREE copy of the *complete* 212-page 1952 ALLIED Catalog.

ALLIED RADIO
833 W. Jackson Blvd., Dept. 14-M-1
Chicago 7, Ill.

Everything in Electronics from ONE Source

▼ BREVITY—Identify by IEN - 13007 If you write the maker ▲▼



Fast, Uniform Drying Can be Simple as This

INSIDE VIEW of dielectric drying oven shows simplicity of dielectric drying. Simply place units to be dried on moving conveyor. Units pass between electrodes and in a matter of minutes come out completely dried — never burned.

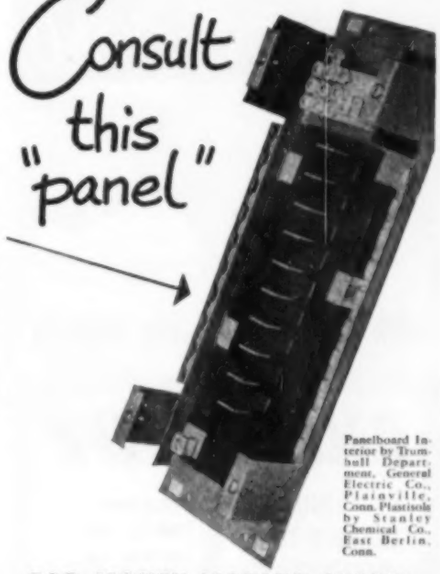
Dryers like this save time, fuel, space, and often provide better quality because drying is always uniform.

Get engineering and cost studies from your nearby Allis-Chalmers Sales Office, or write Allis-Chalmers, Milwaukee 1, Wisconsin. A-3357

ALLIS-CHALMERS

▼ BREVITY—Identify by IEN - 13008 If you write the maker ▲▼

Consult this "panel"



Panelboard Interior by Trumbull Department, General Electric Co., Plainville, Conn. Plastisols by Stanley Chemical Co., East Berlin, Conn.

FOR MONEY-MAKING IDEAS!

You can learn a lot from this heavy-duty panelboard—whose copper conductors are molded right inside of plastisols.

Made from VINYLITE Brand Dispersion Resins, plastisols have outstanding electric insulating properties. They keep the conductors 10 per cent cooler than air does. They are molded at low pressures, flowing safely into delicate molds.

But their unique combination of properties add up to a host of other advantages that should suggest uses in your products. In limitless colors, plastisols make dip-coated dish drainers easier to manufacture and more durable. They produce seeder funnels that long outlast metal. With a wide range of flexibility, they are unbeatable for waterproof overshoes, chemical-resistant coated work gloves, grease-resistant paper coatings, moisture-proof wire insulation, and many more things.

They will solve your production problems, too; lower your product costs. For technical data and a list of compounders of dispersion materials based on these versatile resins, write Dept. LK-3 for your free, 52-page book, "VINYLITE Resins—Dispersion Coatings."

Vinylite BRAND RESINS

TRADE MARK

BAKELITE COMPANY
A Division of
Union Carbide and Carbon Corporation
30 East 42nd Street, New York 17, N. Y.

BREVITY—Identify by IEN - 13010 If you write the maker

PORTELVATOR® "S"

for extra low pick-ups and extra high lifts...

Safety of Operation

is inherent in the mechanical lift principle of this brawny tool, which transmits power through worm, worm gear, and screw.

Eliminates "ganging-up" on heavy lifts. Reduces occurrence of industrial accidents. Saves valuable production time.

Get complete information now and be ready for the challenge ahead. Write for Bulletin P-506-S.

CAPACITY . . . . . 1000 POUNDS
MAXIMUM PLATFORM HEIGHT . . 58"
MINIMUM PLATFORM HEIGHT . . 6"

THE Hamilton TOOL COMPANY
905 HANOVER STREET • HAMILTON • OHIO • U • S • A

BREVITY—Identify by IEN - 13011 If you write the maker

keep costs down

with accurate job time records

CALCULAGRAPH

FIGURES ELAPSED TIME ACCURATELY

PRINTS DATE
STARTING TIME
FINISHING TIME
TOTAL ELAPSED TIME

Keep production costs in line with automatically computed, precision Calculagraph job time records. Just stamp card at beginning and ending of the operation. Calculagraph prints date, starting and finishing time plus precision calculated elapsed time. One Calculagraph can record and compute job time data for one entire shop or department by handling any number of cards in any sequence. Accurate, printed Calculagraph records can be filed for future use in estimating on new orders and checking production efficiency. Calculagraphs are low in cost, practically maintenance-free and built for a lifetime of dependable service.

COUPON BRINGS FULL INFORMATION
— FILL IN AND MAIL TODAY!

CALCULAGRAPH COMPANY
SUSSEX STREET, HARRISON, NEW JERSEY

Send complete data on Calculagraph to:

NAME _____ TITLE _____
COMPANY _____
STREET _____
CITY _____ STATE _____

BREVITY—Identify by IEN - 13013 If you write the maker

TRUCK . . Clamp fork attachment lifts or grips to carry a load

Source: LEWIS-SHEPARD PRODUCTS INC.
192 Walnut St., Watertown 72, Mass.

Firm hydraulic grip

Tubular arms are pivoted on a carrier in this new attachment to replace the standard forks on the company's Spacemaster truck. The arms act as forks for normal lifting and lowering of loads to be handled by the truck. They also swing laterally by means of hydraulic pressure controlled at the operator's position. In the arrangement for action as forks they will handle a load to 1,700 lb. with unit length of 48 in. on a pallet, a bin, a skid platform. In the clamping action they will grip from both sides to carry a load weighing 1,400 pounds. Spread is adjustable between 18 and 46 in. or between 23 and 60 in. in two available ranges.

BREVITY—Identify by IEN - 13014 If you write the maker

WATERPROOFING . . Liquid solution to treat masonry, contains silicone

Source: PRECO CHEMICAL CORP.
40 W. 40th St., Room 230, New York 16, N. Y.

For spray or brush application

Silipruf trade names new liquid containing silicone for application on above-grade porous masonry walls. The liquid penetrates into the masonry, coats it with a microscopically thin water-repellent film. It does not change the appearance of the masonry and can be applied in temperatures down to 15 deg. above zero. Packaging is in 5, 30 and 55-gal. containers.

BREVITY—Identify by IEN - 13015 If you write the maker

FASTENING . . Snap retaining rings supplied in stacks with assembly tool

Source: INDUSTRIAL RETAINING RING CO.
6-10 W. Sidney Ave., Mount Vernon, N. Y.

Ask for brochure

The company announces new packaging and means for dispensing its snap-type retaining rings to apply in grooves on a shaft. The rings are now assembled by the company in stacks. They are supplied with a base on which the stack mounts and with a spring-type tool by which one ring at a time can be drawn from the stack and applied in a machine assembly. Ring tangling is eliminated. The business of picking up a ring and applying it is simplified. The rings are available for shaft diameters from 1/8 to 3/4 inch. Eight tool sizes cover the overall range.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 13016 If you write the maker

LESS DOWN TIME, MORE PRODUCTION FROM PUNCH PRESSES FED BY

LITTELL DOUBLE AUTOMATIC CENTERING REELS

Vital minutes are saved, with practically no down time for coil replacement, when a Littell Double Reel uncoils stock to the punch press. The idle side of the reel is loaded while the other side pays out. When a coil is used up, the operator simply lifts the hub lock pin, then swivels the reel 180°, thus placing the reserve coil in press feeding position. The changeover is complete in a few seconds. Like Littell Single Reels, Littell Double Reels combine balance that means smooth running accuracy with rugged malleable iron and steel construction that assures year in, year out dependability.

FOUR SIZES

No. 3 . . . for coils up to 300 lbs.
No. 5* . . . for coils up to 600 lbs.
No. 10* . . . for coils up to 1,000 lbs.
No. 25* . . . for coils up to 2,500 lbs.
*Can be furnished with motor drive

Write for catalog

F. J. LITTELL MACHINE CO.
ROLL FEEDS • DIAL FEEDS • STRAIGHTENING MACHINES • REELS • AIR BLAST VALVES
4155 N. RAVENSWOOD AVE. • CHICAGO 13, ILL.
District Offices: Detroit, Cleveland

BREVITY—Identify by IEN - 13017 If you write the maker

Modern Design SPEEDS PRODUCTION

● Ames micrometer dial indicators are the most modern available today — and naturally so because Ames policy for over 50 years has been continually to improve design, to take advantage of new materials and to utilize the most advanced manufacturing methods. They are a real aid to the quality control engineer who is trying to keep pace with today's high production schedules.

Because Ames Indicators are functionally designed, they have fewer parts than ordinary indicators. Construction is simple with functional parts being larger and more rugged and adequately supported. Operational friction is at a minimum. Thus, Ames Indicators combine extreme sensitivity and accuracy with the ability and endurance *to stay right on the job longer.*

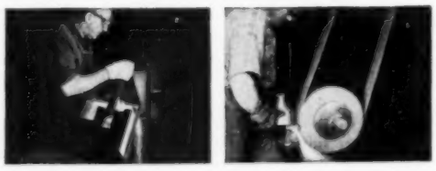
√ *Check this list of features*
1 Forged Solid Brass Case and Stem
2 Heavy Brass Plate
3 Coarse Pitch Stainless Steel Rack
4 Hardened and Burnished Steel Pinion
5 Dials Printed from Steel Engravings
6 Patented Bezel Assembly

Representatives in principal cities B. C. AMES CO. *11 Ames Street Waltham 54, Mass.*
Makers of Micrometer Dial Gauges • Micrometer Dial Indicators

BREVITY—Identify by IEN - 13018 If you write the maker

New "61" CONTACT WHEEL by CARBORUNDUM TRADE MARK

...improves Belt Performance!



You, too, can expect and get better performance plus up to twice the life from abrasive belts by CARBORUNDUM. Only one simple change in your present method is required. Use your same backstand grinder and abrasive belt, but install a serrated "61" Contact Wheel by CARBORUNDUM at the "business" end.

CARBORUNDUM's new "61" Contact Wheel provides higher rates of stock removal, extends productive life on the belt, as well. Belt glazing is virtually eliminated. Your CARBORUNDUM representative will give you full details, and will be glad to arrange an impartial production test.

Only

CARBORUNDUM TRADE MARK

makes **ALL** *abrasive products*
...to give you the proper **ONE**

"Carborundum" is a registered trademark which indicates manufacture by The Carborundum Company, Niagara Falls, N.Y.

BREVITY—Identify by IEN - 13020 If you write the maker

ERASE faster, easier electrically!

Bruning's exclusive 7" eraser . . . won't "fly out"

No other machine or method erases as quickly, easily and cleanly as the Bruning Electric Erasing Machine.

The 7" eraser (exclusively Bruning's) prevents those eraser "fly outs" which let ordinary machines damage your drawings so often.

Your Bruning machine is "lifetime oiled", runs continuously for an indefinite period without heating. It is quiet and you hold it comfortably like a pencil, permitting full view of your work for erasing accuracy. You operate it with convenient finger-tip control.

FREE FOLDER gives details on exclusive erasing advantages. For your copy write today.

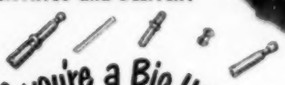
BRUNING

CHARLES BRUNING COMPANY, INC.
Dept. H-121, 100 Reade Street, New York 13, New York

BREVITY—Identify by IEN - 13021 If you write the maker

We may KNOCK YOUR HAT OFF

with our Quote on SAVINGS and DELIVERY



If you're a Big User of Tiny Parts Such as These!

Sound like exaggeration? Not when you know the electronic tube industry looks to The Bead Chain Mfg. Co. for its millions of radio tube pins. Or, that builders of electrical apparatus turn to us for the contact pins, terminals, jacks and sleeves required in tremendous quantities.

PARTS FOR MANY MECHANICAL USES, TOO

For pin-like parts, and variations of bushings needed for *mechanical* purposes, as well, we are the money-saving supplier to scores of makers of toys, business machines, appliances, ventilators, etc.

You Save . . . If we can make it! We can almost say with certainty that if we can make that part you use in large quantities, we can show you a big saving.

Nobody has What We Have! To produce Bead Chain to sell for pennies per yard, we had to develop *our own Multi-Swage Method*. Instead of turning and drilling parts, or stamping and forming them, our Multi-Swage Method automatically swages them from flat stock into precision tubular forms, with tight seams. By increasing the production rate many times and eliminating scrap, this saves a large part of the cost by other methods.

What We Can Make. Parts may be beaded, grooved, shouldered, of most any metal. Generally, should not exceed ¼" dia. or 1½" length. *Standard Items* available in small quantity. *Special Designs* must usually be ordered in lots of a half-million or more, unless frequently reordered.

Get Catalog and Cost Comparison. Send blueprint or sample and quantity requirements. Or write for Catalog-Data folder. The Bead Chain Mfg. Co., 59 Mountain Grove St., Bridgeport, Conn.

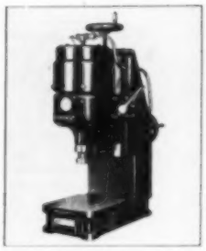
Let BEAD CHAIN make it by

MULTI-SWAGE METHOD

BREVITY—Identify by IEN - 13023 If you write the maker

PRESS . . Pneumatic machine mounts on bench, 1,400 to 6,000 pounds

Source: FAMCO MACHINE CO.
1303 18th St., Racine, Wis.



Gage reads pressure

The power head in this new Air Press is a Bendix-Westinghouse diaphragm unit with spring return, similar to that previously described IEN-10837-51. The piston in this head does not touch the cylinder wall but is joined to it with a long-stroke diaphragm that eliminates friction and seals in the pressure. A spring beneath the piston returns it to the top of its stroke when air pressure is released.

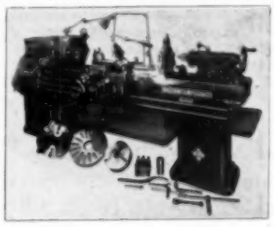
The press is available in four sizes with maximum stroke between 2 and 4 in. and maximum height, ram to table, between 8 and 12 inches. Assemblies with 2 and 2½-in. stroke have 5½ in. of adjustment. Those with 3½ and 4-in. stroke have 8 in. of adjustment. Cylinder area is 12 to 50 sq. in. for approximate capacity of 1,400 to 6,000 lb. on the work when air pressure from a shop source is 120 pounds.

The work surface measures 8 to 10 in. from front to back and 7 to 9 in. from side to side. Throat dimension is 7 in. on two of the machines and 8 in. on the other two. The head is secured to the machine column by a wheel-operated cam. It is adjusted vertically by a screw. Control centers either at a hand-operated valve or one with solenoid actuation. Either design can be supplied as a single or a double unit, the latter requiring the operator to use both hands. Overall dimensions front to back are 20⅛ to 22¾ in., side to side 7 or 9 inches.

BREVITY—Identify by IEN - 13024 If you write the maker

LATHE . . Made in Sweden for tool rooms and production lines

Source: AMERICAN PULLMAX CO.
2631 N. Western Ave., Chicago 47, Ill.



Ninety years in Sweden

Koping trade names a line of lathes made in Sweden and now available through the company in a range of swing capacities from 16 to 40 inches. There are 18 spindle speeds and a range of 40 feeds and threads without gear change. Overall thread-cutting range is through 271 threads, both metric and American.

Construction includes roller bearings for the shafts, a combination of tumbler and lever to provide direct reading for pitch, longitudinal and cross feed, a shield to protect the faceplate and guard the operator against flying chips and cutting fluids, electric gages on certain of the machines to indicate the amount of strain involved by a given cutting operation. A complete line of accessories is available, including turret-type heads, tool-holding mechanisms, carriage stop, coolant-circulating equipment, flexible light fixtures.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58

BREVITY—Identify by IEN - 13025 If you write the maker

GUARANTEED Leak Proof ROBB "Quick-Seal" Couplings

Robb "Quick Seal" Couplings
left to right, 1¼", ⅜", 2", 1", 4" diameters.

- Available in all sizes from ¼" to 6".
- Fabricated from any suitable metal to handle any material from acids to compressed air.
- Handles any required high or low or combined pressures with absolutely no leaks.
- Full free flow in all sizes.
- Furnished with or without check valves.
- Quickly connected or disconnected by a simple push or pull.

Write for descriptive catalog—today.

ROBB MANUFACTURING COMPANY
1307 Washington Boulevard • Pittsburgh 6, Pa.

BREVITY—Identify by IEN - 13026 If you write the maker

YOURS . . . for the asking

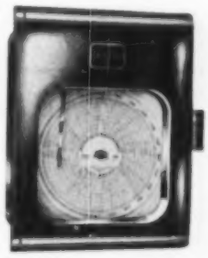
featuring tips for extending the service life of plant equipment

• FACTUAL INFORMATION and easy-to-follow illustrations make these folders valuable to plant engineers and maintenance men . . . and important additions to any power transmission service manual. Send for copies. The Fafnir Bearing Company, New Britain, Connecticut.

FAFNIR BALL BEARINGS
MOST COMPLETE LINE IN AMERICA

BREVITY—Identify by IEN - 13027 If you write the maker

New Recording Voltmeters and Ammeters



The Latest Developments in Electrical Measurement

Outstanding for
- **High actuating torque**
- **Stability of calibration**
- **Low electrical burden**
- **Dependable accuracy**

Bristol Series 500 Recording Voltmeters and Ammeters give you these features—plus a number of refinements for convenient operation and servicing.

The new moving-iron measuring mechanism is a type known for high actuating torque and low electrical burden . . . refined by Bristol engineers for greater accuracy and ruggedness.

Write for Bulletin E1111, to THE BRISTOL COMPANY, 107 Bristol Road, Waterbury 20, Conn.

BRISTOL

AUTOMATIC CONTROLLING, RECORDING AND TELEMETERING INSTRUMENTS

BREVITY—Identify by IEN - 13028 If you write the maker

This Diagonal Tie on crated machinery prevents torsional sway. It is galvanized to resist corrosion.

Tie defense orders safely...

WITH GERRARD ROUND STEEL STRAPPING

It complies with packaging specifications JAN-P-106A, JAN-P-107 and JAN-P-108

● You won't have to worry about either the acceptability or the safety of defense orders tied with Gerrard Round Steel Strapping. It makes a tight, firm tie every time it is used.

You'll be pleased with the versatility of Gerrard Strapping, too. In addition to its suitability for securing boxes, cartons, and cases, Gerrard Round Strapping is the ideal choice for reinforcing all types of pallets, even such irregularly shaped objects as auto springs and axles. And with Gerrard Steel Strapping it is easy to fashion the Diagonal Tie for dependable reinforcement of all six sides of a carton or crate.

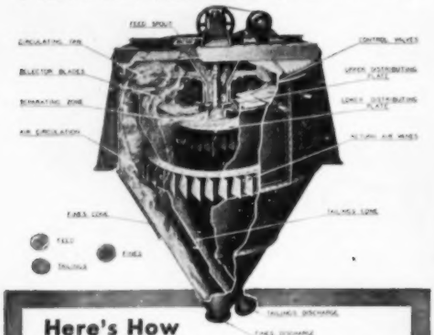
A Gerrard engineer will gladly consult with you about your defense strapping problems. Strapping ordered for defense receives preference in delivery according to current regulations. Strapping for non-defense purposes is being equitably distributed among our customers.

USS

Gerrard Steel Strapping Company
4701 S. Richmond Street, Chicago 32, Ill.

UNITED STATES STEEL

BREVITY—Identify by IEN - 13029 If you write the maker



Here's How STURTEVANT Air Separators Increase Production of Fines ...Lower Production Costs

Sturtevant Air Separators effect production savings by increasing output by 25 to 300% . . . reducing power consumption by as much as 50%.

They efficiently carry off all classified materials in any desired fineness from 40 to 325 mesh and finer . . . eliminate the need of screening in certain applications. Capacities available from ¼ to 50 tons per hr. *Write for full details, today.*

Sturtevant Mill Company
113 Clayton Street, Boston 22, Mass.

BREVITY—Identify by IEN - 13030 If you write the maker

Instant and Accurate Reading of Air Velocities

...with the portable Alnor VELOMETER

If you have a problem involving measurement of air velocities, take a tip from production men in almost every industry who depend on rugged, accurate Alnor Velometers. This precision-built, self-contained, portable instrument gives instant, accurate readings anywhere—in plants, mines, mills or laboratories. Measures speed of flow through ducts, grilles, furnaces or in the open. Needs no calculations or reference charts—anyone can use it and get accurate readings. Available in a wide range of scales, and with a wide assortment of jets and fittings if needed. You'll want full details and prices, so write for Bulletin 2448-G. Illinois Testing Laboratories, Inc., Room 517, 420 No. LaSalle St., Chicago 10, Illinois.

Alnor PRECISION INSTRUMENTS FOR EVERY INDUSTRY

BREVITY—Identify by IEN - 13031 If you write the maker

SAVE TIME AND MATERIALS

Oil-hardened tool steel tapered pin gages accurate to + 0.0001" − 0.0000" insure dependable sizing and location of holes and slots for machinists, set-up men, tool and die men, inspectors, all who need precise hole measurement.

CONCENTRIC TAPER on lower half of each gage fits holes 0.0012" smaller than standard letter, fraction, and number size drill holes. Makes insertion easier. Permits gaging of odd-size holes and slots.

ALL GAGES are 1½ inches long. Sets contain a pair of each size in a plastic case with 4-place decimal equivalents of each size plainly marked.

ALL ITEMS STOCKED FOR IMMEDIATE DELIVERY

THE Horberg GAGE COMPANY
31 STAPLES ST., BRIDGEPORT, CONN.

Quantity
Letter sets @ $45. 32 gages (A-Z)
Fraction Sets @ $50. 60 gages (1/64" to 1½" in 1/64" steps)
Number Sets @ $90. 120 gages (1 to 60)
Single gages @ $ 1.
Stand alone @ $10.

Please Rush checked items and literature to
company
address
name
title

BREVITY—Identify by IEN - 13032 If you write the maker

PRESS . . Double eccentric pull down, rates 30 ton, 2 in. standard stroke

Source: WALES-STRIPPIT CORP.
361 Payne Ave., North Tonawanda, N. Y.

Ask for Catalog T-C

The pull-down head or ram of this new Twin Column press rides a pair of 4-in. guides similar to those in a standard die set. The head connects through two eccentrics to the main 3-in. drive shaft to operate at a standard 80 strokes per minute. The ram is equipped with bearings containing supplies of sealed-in oil for guide lubrication.

Four sizes in the line measure 15 in. front to back over the bed by 25 to 61¾ in. in length between the columns. Clearance dimensions on the under face of the ram are from 10 by 24 in. to 10 by 60 inches. Standard "daylight" from bed to ram with adjustment up and stroke down is 10 inches. The drive calls for a 3 to 5-hp. motor operating at 1,800 rpm.

Control centers at two pushbuttons in worker-safe position on the ram to engage a four-point positive clutch on the drive shaft. The normal action of a friction-type brake on the opposite end of the drive shaft is supplemented by a cam-actuated pre-loading spring. It counterbalances the ram and brings it to a standstill at the point of clutch disengagement to eliminate any drag on the clutch dog. Herringbone gears connect the drive to the motor. A center bearing under the bed supports this part of the drive shaft.

Equipment available to order includes a knock-out attachment for the ram, a punch-shank adaptor to install conventional punch press dies, pneumatic die cushions to assemble in the press bed with individual cushion capacity at 2½ ton for each 100 lb. of air line pressure and stroke ranging from 2 to 5 inches. A friction clutch also can be supplied on two of the four machines for short-stroke high-speed operation between 100 and 400 strokes per minute.

Variable speed is available in a range between 50 and 100 strokes per minute. The company is prepared to supply a complete self-contained shearing die attachment with which the press can be converted to a power squaring shear in about 15 minutes. Stroke greater than standard, to a maximum of 4 in., can be ordered as well as die space to 24 inches.

BREVITY—Identify by IEN - 13033 If you write the maker

SEALING . . Caulking material for building frames, joints, sills

Source: SAMUEL MOORE & CO.
51 Moore St., Mantua, Ohio

Excludes dirt, dust, insects

Rub-Bub Caulk is a new pliable material supplied in various consistencies for use with the company's Caulkezee gun or by brush or knife. It is packaged in pint, gallon, 5-gal. and 55-gal. containers. The material is adhesive, cohesive, insoluble. It skins over quickly and can be painted in about 30 min. after application on building joints.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 13034 If you write the maker

MET-L-WOOD METAL BONDED TO PLYWOOD

Has Hundreds of Structural Uses in Modern Plants

To Name a Few:
- Walls and Partitions
- Doors
- Counters and Shelves
- Traffic Panels
- Truck Bodies (Patented "Ribless" Construction)
- Truck Body Panels
- X-Ray Rooms
- Moisture-Vapor-Proof Rooms and Containers
- Decorative Finishes

Met-L-Wood stock panels and prefabricated units are a challenge to modern industrial engineers and designers because of their multiple possibilities in economical, structurally-sound designs in hundreds of varied uses. Best start toward thinking in terms of Met-L-Wood design opportunities is to send for the Bulletin described below . . . Met-L-Wood Engineering Service is available without obligation on specific problems.

SEND FOR THIS BULLETIN ON MET-L-WOOD USES AND ADVANTAGES
Quick facts, with illustrations and diagrams on Met-L-Wood applications, types, possibilities. Sent without obligation on request.

Met-L-Wood is metal bonded to plywood—permanently. Many metals, woods, thicknesses, shapes, finishes are available to meet YOUR requirements.

MET-L-WOOD CORPORATION
6755 West 65th Street • Chicago 38, Illinois
"Met-L-Wood . . . opening new horizons to structural designers"

BREVITY—Identify by IEN - 13035 If you write the maker

For Safety's Sake Use
DAYTON SAFETY LADDERS

Maintenance men everywhere rely on Dayton Safety Ladders for maximum safety and convenience. Daytons are constructed of tested airplane spruce and reinforced with rigid steel supports to give great strength and lightness of weight.

Handrails of steel guard the large roomy platform for added safety. Half of platform can be raised to form an extra step, when needed. These famous ladders can be set up instantly, are easy to carry and fold compactly for storing. Automatic locking feature insures safely while ladder is in use.

Sizes 3 feet to 16 feet in height (measured from ground to platform) with standard rubber safety shoes at no extra cost.

Write today for Bulletin No. 10

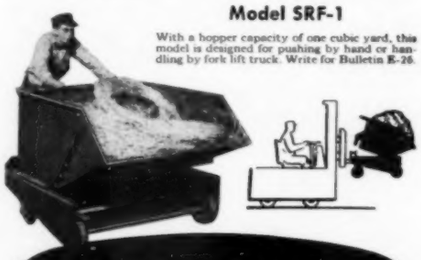
DAYTON SAFETY LADDER CO.
2339 GILBERT AVE. CINCINNATI, OHIO

In Canada—Safety Supply Company—Toronto

BREVITY—Identify by IEN - 13036 If you write the maker

Model SRF-1

With a hopper capacity of one cubic yard, this model is designed for pushing by hand or handling by fork lift truck. Write for Bulletin E-26.



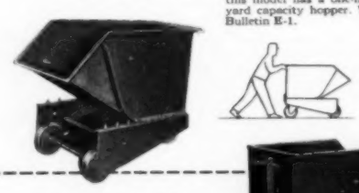
Save Money & Time in Handling Industrial Materials

PHILLIPS SELF-DUMPING PHIL-DUMPS

Making possible greatly improved efficiency and convenience in transporting and dumping industrial materials, Phillips Phil-Dumps are sturdily constructed of heavy gauge steel. All models feature self-dumping hoppers which automatically return to the loading position when the load has been emptied. A safety catch prevents accidental dumping of the load.

Model SRF-½

Featuring a single castered rear wheel for extra maneuverability, this model has a one-half cubic yard capacity hopper. Write for Bulletin E-1.



Model T-SRF-½

Providing a hopper capacity of one-half cubic yard, and dual caster rear wheels, this type can be pulled by hand or by tractor . . . either singly or in train. Write for Bulletin E-38.

MANUFACTURERS SINCE 1883 **PHILLIPS** MINE AND MILL SUPPLY COMPANY PITTSBURGH, PA.

MATERIALS HANDLING EQUIPMENT

2300 JANE STREET • PITTSBURGH 3, PA.

▼ BREVITY—Identify by IEN - 13038 If you write the maker ▼

The 3 of Us Make a Great Team!

Me — THE DESIGNER

My Boston Gear Catalog containing complete information on
101 GEAR GROUPS . . . 4704 STOCK GEAR ITEMS

My Boston Gear Distributor one of
76 CONVENIENTLY LOCATED BOSTON GEAR STOCKS

*1,340,220 Boston Gear Catalogs in circulation. Write for your free copy, today.

BOSTON GEAR WORKS
63 HAYWARD ST., QUINCY 71, MASS.

▼ BREVITY—Identify by IEN - 13039 If you write the maker ▼

There's Only One *Universal* Interlocked Asbestos Packed Flexible Metal Hose

For the conveyance of materials at high temperatures and high pressures—*Universal's* Interlocked Asbestos Packed Flexible Metal Hose deserves your consideration because . . .

1. INTERLOCKED ASBESTOS PACKED CONSTRUCTION — provides greater than average service life under severe conditions of high internal pressures and temperatures.

2. ADVANCED DESIGN—of Universal Flexible Metal Hose can only mean top operating economy on the toughest jobs.

and this is important . . .

Universal Interlocked Asbestos Packed Flexible Metal Hose is available in various weights in practically any workable metal. A wide range of sizes is offered.

Universal Metal Hose Catalog U—101 will give you many suggestions on types and application of flexible metal hose. Send for your copy today — and send along your specifications for recommendations without obligation.

UNIVERSAL METAL HOSE CO.
2131 S. Kedzie Avenue • Chicago 23, Illinois

▼ BREVITY—Identify by IEN - 13041 If you write the maker ▼

DUST COLLECTING . . Separator unit removes dust from air at a machine

Source: AGET-DETROIT CO.
401 Main St., Ann Arbor, Mich.

Carried in stock

Suction blower driven by a motor picks up dust-laden air at equipment for buffing, polishing, wood working, processing. The blower delivers the two into a cyclone separator. Dust and foreign matter fall to a collector drawer at the bottom of the housing. The cleaned air, with any entrained toxic fumes, is delivered into a duct supplied by the user for exhaust out of doors.

Model 20ND30 is the designation. Rating is 2,450 cfm. on a single 6-in. inlet with a 4½ in. of static suction. The discharge outlet measures 8 in. in diameter. Floor space is 20 by 40 inches. Overall height is 78 inches. The motor is available from stock for operation on 220 or 440-volt 3-phase 25-cycle ac. in standard construction.

▼ BREVITY—Identify by IEN - 13042 If you write the maker ▼

CLEANING . . Plastic sponge and holder to wash and rinse finished surfaces

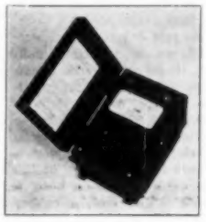
Source: ABAR PLASTICS CO.
6941 Formosa Way, Pittsburgh 8, Pa.

Hand-EE-Sponge is a new rectangular plastic sponge measuring 3 by 5 by 1½ inches. It is set into a plastic head equipped with a threaded hose connection to introduce water back of the sponge. The water keeps it clean and also washes the surface over which the sponge is moved. List price is $1.

▼ BREVITY—Identify by IEN - 13043 If you write the maker ▼

TESTING . . Electric meter reads soil resistance, is battery operated

Source: ASSOCIATED RESEARCH INC.
3762 W. Belmont Ave., Chicago 18, Ill.



Vibroground Model 243-A is a new direct-reading meter to measure soil resistance in a range from 0 to 30,000 ohms per cubic centimeter. The meter is battery operated, weighs 9 lb., and measures 9 by 6 by 6½ inches.

Application is by a probe that is inserted in a hole bored into the ground to desired depth and connected by leads to the meter. With the probe in position, a combination adjusting and reading switch is operated to provide reading.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

▼ BREVITY—Identify by IEN - 13044 If you write the maker ▼

Plywood
WOOD OF 1001 USES

Fast 24-Hour Shipping Service from AETNA Plywood's 4 Warehouses

Big Plywood advantages . . .

1. **LARGE SIZE PANELS—4' x 8'. Saves labor costs and time.**
2. **SPLITproof, WARP resistant. Stronger than steel!—(weight for weight.)**
3. **LIGHTweight, Cuts Easy, Durable. Goes up fast, paints smoothly.**

Over 40 species—Fir, Gum, Birch, Walnut, etc. in stock 1/16" to 3" thick, 36" x 48" to 48" x 192".

Write for FREE Plywood Buying Guide, the Teleply Ticker Price List #535, today.

AETNA PLYWOOD & VENEER CO.
1724 N. Elston Ave., Chicago 22, Ill. ARmitage 6-7100
Branch Warehouses: Grand Rapids 7, Mich.; Indianapolis 2, Ind.; Rockford, Ill.

▼ BREVITY—Identify by IEN - 13045 If you write the maker ▼

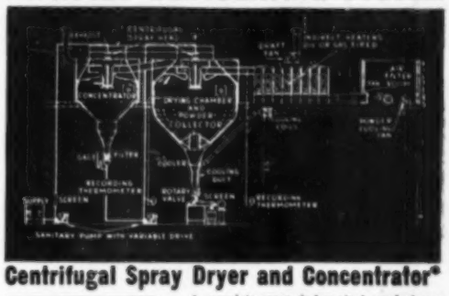
This Hannifin catalog gives complete engineering and design data on 11 Hydraulic cylinder types (1" to 8" bore), with or without cushions—styled to meet every mounting requirement. Interchangeability of collars and caps makes possible unlimited combinations. Send for your copy of this valuable reference.

WRITE FOR BULLETIN 110.

HANNIFIN
Hannifin Corporation • 1107 S. Kilbourn Ave. • Chicago 24, Illinois

▼ BREVITY—Identify by IEN - 13046 If you write the maker ▼

IMPROVED DEHYDRATING SYSTEM



Centrifugal Spray Dryer and Concentrator*

For dehydrating
- Chemicals
- Pharmaceuticals
- Blood or Blood Plasma
- Milk Products
- Eggs
- Vegetables
- Coffee and many other products

A complete spray drying plant employing a unique centrifugal type spray head. No high-pressure pump is used, and due to the design of the spray head, emulsions as well as solutions can be dried. No clogging or wearing of nozzles is caused by the suspended solids. The powder is collected and cooled in the drying chamber.

Concentrator Available Separately

Concentrator can be operated as separate unit for reducing liquid products to almost any desired degree of concentration, almost instantaneously, retaining natural flavors and vitamins.

WRITE FOR FREE BOOKLET

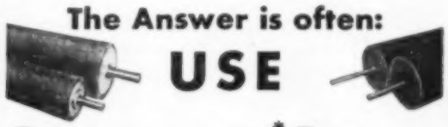
Attractive bulletin illustrates and describes spray drying plants; explains operation in detail. Shows plan views; application photos. Send for your FREE copy today.

681

DRYING & CONCENTRATING CO., 332 S. Michigan Ave., Chicago, Ill.

▼ BREVITY—Identify by IEN - 13047 If you write the maker ▼

The Answer is often:



USE

SHAF-TITE* ROLLS

Many Patented Constructions

Choice of

METAL, RUBBER, or WOOD ROLLS

Send For NEW ROLL CATALOG No. 48

INDUSTRIAL ROLL DIVISION

RODNEY HUNT MACHINE CO.
873 Main Street — RODNEY HUNT — Orange, Mass., U.S.A.
*Reg. U.S. Pat. Off.

BREVITY—Identify by IEN - 13048 If you write the maker

MEET THE NEW MODEL

MUCKLE VENTS

Take a look at the new silhouette . . . it's low slung and streamlined —better looking on any roof!

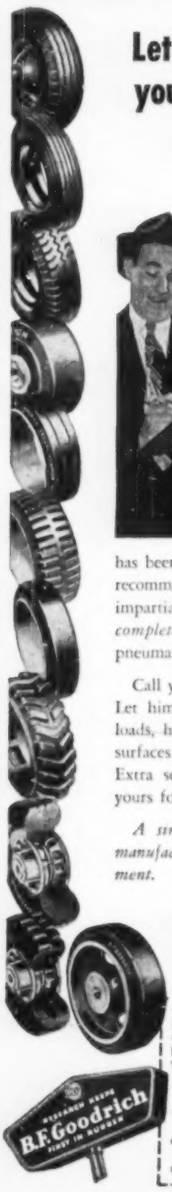
Get away from old, "eye sore" ventilators—get the newly designed Muckle Vents. Engineering for better performance in moisture laden air—the motor is out of line of air flow. A compact, good looking, easy to install all-in-one unit to fit any roof.

Write today for more information on Muckle Vents.

Muckle MANUFACTURING CO. OWATONNA 33, MINN.

BREVITY—Identify by IEN - 13049 If you write the maker

B.F.Goodrich



Let this man analyze your Industrial Tires and Wheels

THIS man represents *your* local B.F.Goodrich dealer. He and *all* BFG representatives want to offer this service to you. They have been specially trained to analyze your industrial tire and wheel operations and to make impartial recommendations regarding size, type, care and maintenance. These recommendations are valuable to you. In many cases, industrial tire life has been increased as much as 100%! The recommendations this TW man makes are impartial because *only* B. F. Goodrich has a *complete* line of solids, semi-pneumatics and pneumatics in a wide range of sizes.

Call your local BFG representative today. Let him survey your operation . . . study loads, hauls, equipment, floors and hauling surfaces. Then let him offer his suggestions. Extra service from your industrial tires is yours for the asking.

A similar program is available for the manufacturers of industrial hauling equipment.

Write for full details of the TWAP TIRE AND WHEEL ANALYSIS PLAN

The B. F. Goodrich Co.
Department TW-145
Akron, Ohio

Please give me additional information on your new Tire and Wheel Analysis plan.

Name _____

Title _____

Company _____

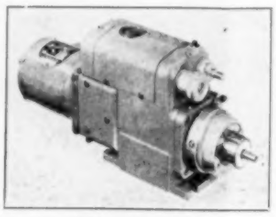
City _____ State _____

WHEREVER WORK FIRST IN RUBBER B.F.Goodrich

BREVITY—Identify by IEN - 13051 If you write the maker

DRILLING . . Motor driven head, air-hydraulic feed, to 5/16 in. in steel

Source: ROCKWELL MFG. CO.
614 E. Vienna Ave., Milwaukee 1, Wis.



Valve varies feed

Stroke is maximum at 1½ in. for this new Model 19-150 drill head. Controls are included for rapid traverse at 360 ipm., feed to 70 ipm., dwell and rapid return at 300 ipm. Controls for the feed, length of rapid traverse and final depth are grouped at the front. All are variable in their ranges.

Power for the feed is obtained by connection to a shop air line. Feed control is hydraulic by means of a valve. The spindle can be driven direct by a motor or through a gear train or by belt. Motor rating is ⅓ or ½ hp. Mounting can be made in any position as required by the application.

BREVITY—Identify by IEN - 13052 If you write the maker

PIPE . . Rigid extruded plastic for corrosive fluids, ½ to 2 in.

Source: CLOPAY CORP.
1942 Clopay Square, Cincinnati 14, Ohio

Softens at 70 degrees F.

Tuffstuff designates a new extruded plastic pipe made of unplasticized polyvinyl-chloride compound. The material is impervious to concentrated acids, alkalis and many solvents. It is rigid but not brittle, can be bent, cemented, welded. It is relatively non-toxic, odorless, tasteless.

BREVITY—Identify by IEN - 13053 If you write the maker

CLEANING . . Portable vacuum machine for wet or dry operation, ¾ hp. motor

Source: S. C. JOHNSON & SON INC.
1523-27 Howe St., Racine Wis.

Minimizes mopping

Wet-Dry Vac is a new caster-mounted vacuum-cleaning machine measuring 16 in. in diameter by 28 in. in height. It can be used to pick up scrubbing and rinsing water from a floor. It operates dry to clean overhead areas and to pick up shop litter, waste and debris. It can be applied with special extensions for the cleaning tools to draw soot and ash from boiler tubes and furnace walls.

Each unit is supplied with a set of standard tools and attachments for a majority of the usual cleaning jobs. Equipment includes a flexible hose, a steel cleaning wand, a large floor-cleaning tool, a rubber squeegee and a rubber cord set.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 88

BREVITY—Identify by IEN - 13054 If you write the maker

SAFER CHEMICAL STORAGE

We built the three 140,000-gal. flat-bottom tanks shown above to store 95 per cent sulphuric acid solution for the American Viscose Corporation at Front Royal, Virginia.

These tanks are of sturdy, welded steel construction which means tight joints and no leakage problems. Maintenance is easy too. Regular painting over smooth welded steel surfaces keeps the tanks in top operating condition.

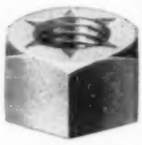
We are also equipped to fabricate corrosion-resistant tanks and linings from a variety of special metals. State capacity, dimensions and location when requesting quotations.

CHICAGO BRIDGE & IRON COMPANY
2123 McCormick Building • Chicago 4, Illinois
Atlanta • Birmingham • Boston • Cleveland • Detroit • Houston
Los Angeles • New York • Philadelphia • Salt Lake City
San Francisco • Seattle • Tulsa
Plants in BIRMINGHAM, CHICAGO, SALT LAKE CITY and GREENVILLE, PA.

BREVITY—Identify by IEN - 13055 If you write the maker

IT GRIPS THE BOLT... ...AND HOW!

GRIPCO LOCK NUT



lives up to its name! It grips the bolt so firmly that bolt and nut practically become a single unit, which resists vibration, strain, oil or chemicals.

However, the *Gripco Lock Nut* may be removed with a wrench and re-applied many times without appreciable loss of locking power.

Gripco Lock Nuts are available in stainless steel or brass and for National Fine or National Coarse bolt threads.

GRIPCO PILOT PROJECTION-WELD NUTS

Speed production. Save time. The raised circular pilot fits snugly into the pilot hole, centering the nut instantly, accurately, ready for resistance welding. No measuring, no jigs, no special fixtures, no time wasted. Made with either of two pilot heights to fit different thicknesses of metal. Available with Standard or Gripco Lock Thread.

GRIPCO COUNTERSINK WELD NUT

Hot metal particles dislodged by welding are shunted away from and do not stick to the Nut Threads.

Samples and prices sent promptly on request. Specify type of nut and type of thread as well as nut sizes.

GRIP NUT COMPANY
310-S S. MICHIGAN AVENUE, CHICAGO 4, ILL.

BREVITY—Identify by IEN - 13056 If you write the maker

WHEN YOU NEED STORAGE SHELVES INSTALL

* Patent applied for

PREFABRICATED SECTIONAL SHELVING

Now available in the United States, this revolutionary new shelving made of wood is extremely strong. Constructed on the self-tension principle, Lundia Prefabricated Sectional Shelving can be easily erected, expanded or dismantled without the aid of tools of any kind. Simplicity of design makes possible its use in an almost unlimited number of different ways in stores, offices and factories. Write today for farther information on economical, easy-to-install Lundia Shelving.

SPECIFICATIONS

Standard measurements for each section—

Depth	Length	Height
12"	24", 30" or 36"	84"
18"	30" or 36"	84"
24"	30" or 36"	84"

Shelves are adjustable every 2 inches.

CONSTRUCTION

Lundia Shelving comes in sections. After the first standard section or unit has been installed, this shelving can be extended to any length by simply adding additional sections and shelves.

Made by HILL-CLARK-FRANCIS LIMITED, New Liskeard, Ont.

Sole Distributors for Eastern United States

STORES KEEPING SPECIALTY SUPPLY COMPANY
509 WILLIS AVE., N.Y. 55, N.Y.
Phone Mott Haven 5-4880-1

▼ BREVITY—Identify by IEN - 13058 If you write the maker ▲▼

Before you select a Temperature Regulator, compare low-cost Stacon with the rest. No other regulator has as many features or offers as many advantages as a Farris Stacon.

PROVE IT!

Make this Chekchart Test

	Farris Stacon	Air Operated	Self Operated
• Dirt Proof — Hermetically Sealed?	Yes		
• Extreme Accuracy?	±1°		
• Packing or Glands to Leak?	No		
• Drop-tight Shut off?	Yes		
• Vapor-steam Energized Super Power Pilot?	Yes		
• Supervision—Maintenance?	None		

Write for Stacon Bulletin 50-1000. It contains complete information on the most sensitive, accurate, economical temperature regulator available . . . anywhere.

Farris Stacon Corp.

432 COMMERCIAL AVE. PALISADES PARK, N. J.

▼ BREVITY—Identify by IEN - 13059 If you write the maker ▲▼

YOU can live in North Georgia's famous, bracing, all-year enjoyable climate...

- Year round sports
- 8 Miles from Atlanta—Gateway to the South
- 20 minutes from new Allatoona Dam, famed for fishing and water sports
- 30 minutes from 8 fine public golf courses, including the one designed by the immortal Bobby Jones
- 60 minutes from the scenic beauty of the Blue Ridge Mountains
- YOU and your family can enjoy the famous "Southern Hospitality"—a new joy in living.

YOU can begin a NEW CAREER with unexcelled opportunities for the future.

YOU can SERVE YOUR COUNTRY by becoming an important part of its defense activities.

All this YOU can do—if you can qualify for opportunities now open in LOCKHEED'S Georgia Division long-range production program.

GET IN ON THE GROUND FLOOR IN THESE KEY POSITIONS:

Manufacturing Engineers
Industrial Engineers
Mechanical Engineers
Aeronautical Engineers
Electrical Engineers
Design Engineers
Liaison Engineers
Engineering Draftsmen
Tool Designers
Tool Planners
Tool & Die Makers
Stress Analysts
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Tool Inspectors
Process Analysts
Other Openings in Specialized Fields

Write today to

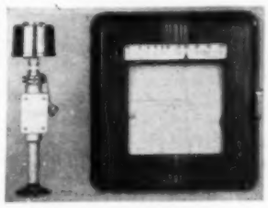
MR. FRANK J. JOHNSON
EMPLOYMENT MANAGER
394½ PEACHTREE ST., N. E.
ATLANTA, GEORGIA

LOCKHEED AIRCRAFT CORPORATION
Georgia Division
Marietta, Georgia

▼ BREVITY—Identify by IEN - 13061 If you write the maker ▲▼

METER . . Reads daylight intensity and traces records on a strip chart

Source: LEEDS & NORTHRUP CO.
4934 Stenton Ave., Philadelphia 44, Pa.



How bright is the day?

Daylight in terms of foot candles is read by a barrier-layer photocell assembled in the sensitive element of this new Illuminometer. The reading is recorded by the company's electronic Speedomax strip-chart instrument. It can be located in any convenient position. The chart carries a logarithmic scale to expand the region of 0 to 3,000 foot-candles over three-quarters of the scale span. Full-scale value is 10,000 foot-candles. The recording pen can move across the full 9⅞ in. active chart width in about 3 seconds. It shows each significant detail of daylight variation.

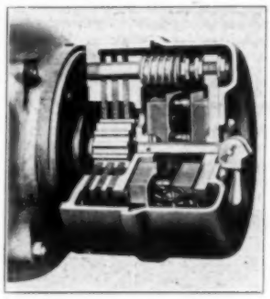
The cell assembly measures 5 in. in diameter by about 13 in. in height. Its output is to 250 microamperes. Operation is within ambient limits between minus 40 and plus 120 deg. F. The barrier-layer cell has a color response similar to that of the human eye.

The recorder is enclosed in a housing that measures 18¼ by 12⅝ by 20 inches. It employs a dc. potentiometer measuring circuit. A motor operating on 110-volt 50 or 60-cycle ac. drives the chart at nominal speed of 2 in. per hour.

▼ BREVITY—Identify by IEN - 13062 If you write the maker ▲▼

DRIVE . . Magnetic brake for Type C motors on machines, cranes

Source: DINGS BRAKES INC.
4738-42 W. Electric Ave., Milwaukee 46, Wis.



Cover is removable

Friction discs engage a gear mounted on a rear extension of a motor shaft in this new brake assembly. They rotate with the gear between friction plates, one of which acts as the magnet armature. The magnet is connected into the motor circuit so it attracts this armature plate, drawing it back against the spring action and releasing the friction discs as long as the circuit is closed.

Opening the circuit releases the magnetic pull and permits the springs to move the plates so they grip the discs and stop the motor at once. The assembly provides for visual inspection and for torque and wear adjustment. It is available for ac. and dc. motors in NEMA Type-C sizes. A toggle lever and pull rod in the center of the assembly permit releasing the brake for normal action or locking it in "off" or released position.

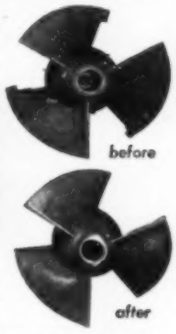
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 88

▼ BREVITY—Identify by IEN - 13063 If you write the maker ▲▼

SAND-O-FLEX

eliminates hand sanding

on propeller blades



unretouched photographs

These cast aluminum blades are used in aircraft heaters manufactured by Dynamic Air Engineering Co., Los Angeles. After the burrs are filed off, props are finished with Sand-O-Flex brush-backed sanders which get in and around the blades and give them a smooth satin finish in a fraction of the time of sanding them by hand.

If you have a hand sanding or deburring operation, you need Sand-O-Flex. Four sizes available for portable or for heavy-duty production line requirements. They fit your present power tools, no special equipment to buy. Write for free catalog and prices.

merit products, inc. | 4023 Irving Place, Culver City, Calif.

▼ BREVITY—Identify by IEN - 13064 If you write the maker ▲▼

Users Tell Our Story Best!

163 ORDERS
FROM 3 CUSTOMERS ALONE...TOTALED
1,421,402 LBS.

SPEED PATCH

WORLD'S FINEST, FASTEST, FLOOR FIXER!

TAKES ONLY ONE MINUTE PER SQUARE FOOT!

Think of it...just 3 customers purchased almost 1½ million lbs. of Speed Patch. And more orders are coming from them regularly. They have ordered loads of other Rock-Tred products as well. Must be good. Let their experience be your guide. Find out how Speed Patch can make your floors pay off in cash. Write today!

ROCK-TRED Corporation
Manufacturers of a Complete Line of Building Maintenance Materials
7440-7450 North St. Louis Avenue • Skokie, Illinois
In Canada: Rock-Tred Corporation (Canada) Limited, Toronto 3

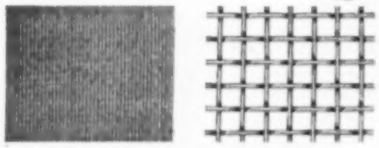
▼ BREVITY—Identify by IEN - 13065 If you write the maker ▲▼

WOVEN WIRE

Roebling makes a complete range for every industrial need

FROM FINEST FILTER CLOTH to toughest aggregate screen, the Roebling line of woven wire products brings maximum efficiency . . . exceptional service life and dollar-savings. And that's because Roebling offers you exactly the right weaves and constructions for your particular operations . . . combined with wires made of special metals or alloys that will stand up best and longest under your individual working conditions.

Send for full woven wire information today.

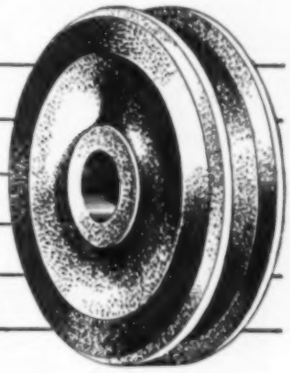


WOVEN WIRE FABRICS DIVISION
John A. Roebling's Sons Company, Roebling, New Jersey

ROEBLING

▼ BREVITY—Identify by IEN - 13066 If you write the maker ▲▼

WROUGHT STEEL CRANE WHEELS by STANDARD



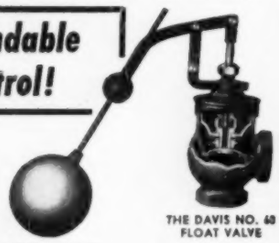
Built for *extra* service by a pioneer producer of railroad wheels, under continuous quality-control from melting of metal to final finishing. Rugged, tough, strong, durable. Available in a range of sizes. Prices on request.

STANDARD STEEL WORKS DIVISION
Burnham, Mifflin Township, Pennsylvania
BALDWIN-LIMA-HAMILTON CORPORATION
PHILADELPHIA 42, PA. • Offices in Principal Cities

BALDWIN-LIMA-HAMILTON

BREVITY—Identify by IEN - 13067 If you write the maker

For Dependable Flow Control!



THE DAVIS NO. 60 FLOAT VALVE

. . . use DAVIS FLOAT VALVES

ENGINEERS interested in working out efficient, trouble-free fluid level and flow control hookups will find a wide choice of units offered in the Davis line of float valves, float boxes, and fluid control valves.

For Float Valve dependability the Davis No. 60 is unexcelled. Here are a few of its outstanding features:

1. The Famous Davis Single-Seat Pilot Stem Valve! Tight-closing and non-sticking. Standard sizes will open against any pressure up to 125 lbs.
2. No internal packing! Disc renewable easily and economically. Hot or cold liquid at high or low pressure handled without hunting or water hammer.
3. Sizes 3" and smaller are all-brass valves. Larger sizes have semi-steel body, bronze bonnet, piston and trim. Globe or angle body patterns. Send for new Catalog A-50.

DAVIS REGULATOR CO., 2529 S. Washtenaw Avenue, Chicago, Ill.

DAVIS REGULATOR COMPANY

BREVITY—Identify by IEN - 13068 If you write the maker

FREE SANITARY SURVEY!

Let your Dolge Service Man make a complete sanitary survey of your premises with a view to helping achieve more effective, efficient, economical maintenance.

Send for Booklet No. 12

Dependable DOLGE

WESTPORT, CONNECTICUT

BREVITY—Identify by IEN - 13069 If you write the maker

THE HP-600 ARBOR PRESS

For EFFICIENCY and ECONOMY

For light high-speed production and assembly presswork. Provides 800 lbs. of sensitive pressure and sensitive control. Frame, table and table standard are close grained iron castings, well braced and accurately machined. Ram and pinion are special steel. Three slots for arbor work—¼", ½" and ¾" wide. The ideal "Pressure Tool" for model makers, jewelers, instrument makers, radio men, research laboratories, schools, light production work, etc.

Straightening attachment available at $4.95.

$14.00 POSTPAID U.S.A.

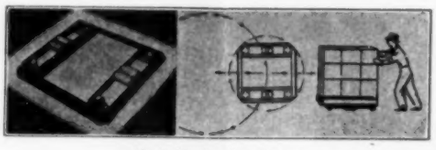
Write for further information.

H. D. HERDER TOOL SPECIALTIES
3724 S. MICHIGAN AVE.
KALAMAZOO, MICH.

BREVITY—Identify by IEN - 13070 If you write the maker

TRUCK . . Swivel type dolly for handling loaded pallets to 2 ton

Source: FRANK L. ROBINSON CO.
1951 Latham Square Bldg., Oakland 12, Calif.



Straight ahead and turn

Four rolls equipped with ball bearings and mounted on stationary hexagon shafts carry the load on this new steel-frame dolly. Ball-bearing casters provide stability at the four corners. Ace Swivel is the designation. Platform dimensions are 3 by 3 ft. to 4 by 4 ft. in three available sizes. A load can be moved forward or back in a straight line or it can be swiveled on the center or run in a circle in either direction.

BREVITY—Identify by IEN - 13071 If you write the maker

MARKING . . Self-adhesive labels to mark prices according to OPS

Source: AVERY ADHESIVE LABEL CORP.
1614-18 S. California St., Monrovia, Calif.

Quick delivery from stock

Stock labels that adhere by pressure, without moisture, are now available in the company's stock line for overnight delivery throughout the United States so manufacturers can price mark their products and meet delivery schedules in the short time required between approval of an OPS price increase and the time required by law for the price marking.

Stock sizes are available in ½-in. round and in rectangular sizes measuring ⅜ by ⅝ in., ½ by ¾ in. and ¼ by 7/16 inch. Each is printed in one color with the required "OPS . . SEC43 . . CPR7.Price." The labels are supplied in multiple rows on flat sheets. They will adhere to any smooth clean surface.

BREVITY—Identify by IEN - 13072 If you write the maker

PACKAGING . . Polyethylene bag in perforated strips ready to fill

Source: BETTER BAGS INC.
838-42 N. 6th St., Dept. IN, Philadelphia 23, Pa.

Individual bags tear off

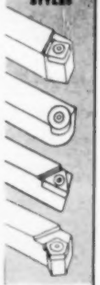
Oto-Strip is a new strip assembly of heat-sealing polyethylene bags designed to feed through a user's filling machine and then to be closed by heat sealing while adjacent bags remain connected in the strip. Sizes range from 1 by 1 in. to 5 by 6 inches. The strip is supplied in rolls as illustrated.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

BREVITY—Identify by IEN - 13073 If you write the maker

The Only Carbide Tool THAT NEEDS NO SHARPENING

4 STOCK STYLES



SEND FOR CATALOG 51

Here is the answer to the long-standing need for carbide tools in plants where there is no grinding equipment, where facilities are overloaded, or where grinding costs are known to be excessive.

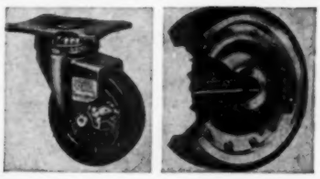
The long-lasting Kennametal tip, mechanically held to provide a thermal-strain-free assembly, can be indexed as required to utilize all cutting edges. It then may be discarded, if desired.

Available in four sizes—1/2", 5/8", 3/4", and 1"—in styles shown at left. Suitable for high-rate machining of steel, cast-iron, and nonferrous materials.

KENNAMETAL Inc.
Latrobe, Pa.

MANUFACTURERS OF SUPERIOR CEMENTED CARBIDES AND CUTTING TOOLS THAT INCREASE PRODUCTIVITY

BREVITY—Identify by IEN - 13074 If you write the maker



DARNELL CASTERS

- made in all sizes in both swivel and stationary types
- furnished with either semi-steel or rubber tread wheels
- assures maximum floor protection and reduces wear on equipment
- plus an appreciable increase in employee efficiency

DARNELL CORP. LTD., 60 WALKER ST. NEW YORK, N.Y.
LONG BEACH, CALIFORNIA 36 N. CLINTON, CHICAGO, ILL.

BREVITY—Identify by IEN - 13075 If you write the maker

LIKE AN ATOM-IC EXPLOSION

Just ONE 1/32" pin-hole size faucet LEAK MUSHROOMS into ATOMIC WASTE of approximately 76,000 gallons of water yearly—COSTING: $10.13 @ $1 per M cubic feet

If a hot water faucet, then actual FUEL WASTED heating 76,000 gallons costs approximately:

$27.65 if coal (7,900 lbs.)
$38.00 if oil (633 gals.)
$50.63 if gas (67,500 cu. ft.)

STOP this needless WASTE during today's MATERIAL and MANPOWER shortages with 'SEXAUER' "EASY-TITES" that outwear ordinary faucet washers 6-to-1; thus SAVING labor on 5 REPEAT repairs, PLUS water and fuel, while prolonging the life of SCARCE fixtures.

PAT'D. **"EASY-TITE" Faucet washers**

...a modern laboratory triumph, are compounded from du PONT NEOPRENE instead of rubber—to withstand DESTRUCTIVE HEAT common in present-day super-heating water systems—that formerly broke down washer's structure (tested to withstand 300°F.)

Built like a tire with fabric re-inforcement

they resist the grinding, closing squeeze that SPLIT and MUSH ordinary washers out of shape...causing LEAKS.

Through combining NEOPRENE and FABRIC RE-INFORCEMENT they OUTWEAR ordinary washers 6-to-1 on hot or cold TAPS—thus you slash water, fuel and labor costs.

THE NEW 'SEXAUER' CATALOG, Edition F, just out pictures over 2500 TRIPLE-WEAR plumbing REPAIR parts and Pat'd. Precision Tools. It's today's accepted buying guide for discriminating purchasing and maintenance personnel among thousands of top PLANTS, INSTITUTIONS and GOVERNMENT AGENCIES that rely on SEXAUER repair materials. *Send for your copy today!*

Then too, there's a SEXAUER TECHNICIAN within quick call from coast-to-coast, who offers a special SURVEY service that sets up a schedule of the exact replacement parts required for your particular plumbing fixture regardless of make or age and *without obligation.*

A postcard will bring him and your NEW Catalog F promptly.
J. A. SEXAUER MFG. CO., INC., Dept. K-121.
2503-05 Third Avenue, New York 51.

SEXAUER
WORLD'S LEADING SPECIALISTS IN PLUMBING AND HEATING REPAIR PARTS

as advertised in THE SATURDAY EVENING POST

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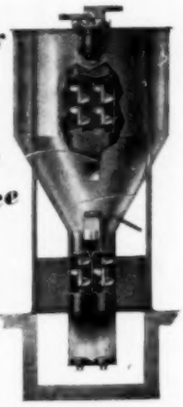

• two times faster

• a better mix

• less floor space

Blue Streak

TWO-SPEED

TWIN SPIRAL

MIXER

This compact mixer provides high capacity production with a saving in floor space and time.

Its faster, more accurate blending is assured through the use of two-speed twin spirals. Mixing is complete and uniform in half the time, resulting in a product of constant quality at lower cost. Sturdy construction provides the added factor of dependability under all work loads. Write now for full information.

PRATER

PRATER PULVERIZER COMPANY

1536 S. 55th Court • Chicago 50, Ill.

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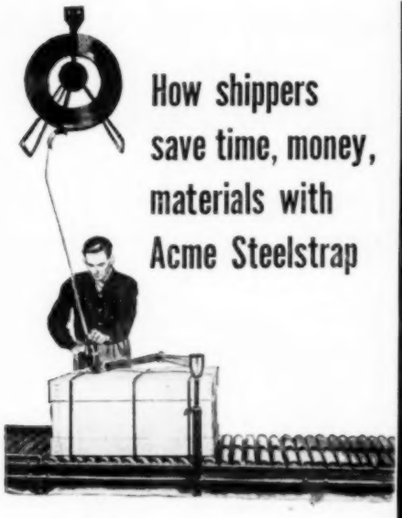


How shippers save time, money, materials with Acme Steelstrap

"Lost time is never found again."

—Ben Franklin's Almanac, 1757

Whatever the product, the cost per unit shipped depends considerably on packing methods. That's why so many companies secure their products (and their profits) with Acme Steelstrap.

They save time and labor because Acme Strapping tools position the strap, pull it tight, seal it and cut it quickly and easily.

They save on shipping costs because Acme Steelstrap cuts weight and bulk, reduces storage space, cuts loading time, minimizes damage in transit.

For example, a window shade manufacturer (picture above) credits labor savings of 25 per cent and increased orders handled of 30 per cent to an improved materials handling setup based on using Acme Steelstrap.

We are looking forward to the day when we can supply Acme Steelstrap to everybody who wants it, in the quantities they want it. In the meantime, why not get all the information you can about it? Ask your Acme Steel representative for details, or write Dept. IEN-121.

ACME STEEL COMPANY

2840 Archer Avenue, Chicago 8

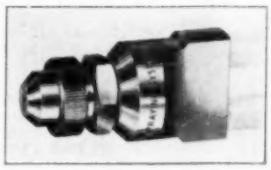
Steel Strapping · Stitching Machines & Wire · Venetian Blind Slat Stock · Corrugated Fasteners · Strip Steel

ACME STEEL

▼ BREVITY—Identify by IEN - 13080 If you write the maker ▼

SPRAYING . . Pneumatic nozzle mounts pipe connections at rear end

Source: SPRAYING SYSTEMS CO.
3208 Randolph St., Bellwood, Ill.



Spray is adjustable

New design in the company's ⅛-JBC pneumatic atomizing nozzle moves the pipe connections, formerly on opposite sides for incoming air and liquid, to parallel position at the rear of the housing. Valves can be placed on the entering lines and assembly can be made in restricted locations prevented by the previous side connecting design. Pressure and siphon designs to produce round, flat and wide angle round spray are included in either brass or stainless steel.

▼ BREVITY—Identify by IEN - 13081 If you write the maker ▼

DRAFTING . . Glass cloth, dimensionally stable, ink or pencil

Source: KEUFFEL & ESSER CO.
299 Adams St., Hoboken, N. J.

Stabilene booklet presents details

Stabilene trade names a transparent impregnated glass cloth initially developed by the company some time ago. It has been used primarily in the aircraft industry for original drawings, tracings, photographic reproduction. It also has been employed in map making and for use on optical comparator screens. It now is offered for general use in industrial engineering departments.

The cloth is available in 36 and 48-in. widths in rolls or cut sheets. It is shipped and stored in cardboard tubes, can be stored flat but should not be folded. It can be drawn upon with ink or pencil. The lines will remain dimensionally stable. It is available with a sensitized coating with which reproductions can be made by contact printing. One special form is a two-ply assembly with an opaque surface that can be scribed to produce transparent lines in this surface, the finished work serving as master for line layout and tool drawings.

▼ BREVITY—Identify by IEN - 13082 If you write the maker ▼

CONDUCTOR . . Electric wire and cable in kit assembly for development use

Source: TENSOLITE INSULATED WIRE CO.
199 Main St., Tarrytown, N. Y.

Twelve types of stranded wire and cable, from the company's miniature line, are assembled on spools in lengths ranging from 50 to 500 ft. in this new kit to provide a supply for electronic development. The kit mounts on a desk. The wires are wound on spools particularly developed for the purpose. Refills are available. List price of the new kit is about $30.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 13083 If you write the maker ▼

Specify this oil seal to save space!

Clipper Seal's narrow flange sections permit minimum depths for oil seal cavities, thereby allowing engineers greater design freedom in the present trend toward more compact and efficient machines.

In addition to saving space, there are other important reasons why Clipper Seals are specified today:

(1) Their tough one-piece rigid heel and resilient inner lip retains oil with light but positive sealing contact, protecting bearings against grit, moisture and corrosive fumes.

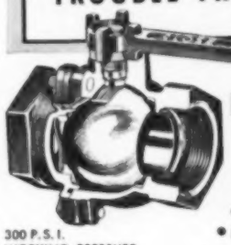
(2) Both endless and split type seals, with specially designed garter springs, help speed assembly of precision parts—make maintenance quicker and easier.

If simplicity of design is your problem, then use Clipper Seals. They're available in a variety of lip designs for different bearing surfaces, to fit shafts of ¼" to 66" in diameter, and for temperatures to 450F. For more complete information, send for brochure PK-46A. Address: Johns-Manville, Box 290, New York 16, N. Y.

JM Johns-Manville CLIPPER SEALS

▼ BREVITY—Identify by IEN - 13084 If you write the maker ▼

ENGINEERED TO GIVE LONGER TROUBLE-FREE SERVICE



ROCKWOOD ball VALVES

• LEAK PROOF SERVICE

• FULL ROUND FLOW

• QUICK OPENING & CLOSING

300 P.S.I. WORKING PRESSURE

The most dependable and efficient performing Valve on the market. Every Rockwood Valve is designed and built to give you longer and more economical service.

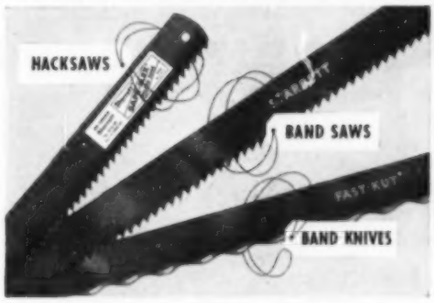
The full round flow — leak proof service — quick opening and closing features of the Rockwood Ball Valve give you better and faster service with no maintenance. When you install a Rockwood Valve on the line, it does the job better.

For use in oil refineries, food, paper, textile, chemical and rubber plants, etc. Write for sizes and prices and for bulletin V-4.

Distributors in all principal cities.

ROCKWOOD SPRINKLER COMPANY
40 HARLOW ST. WORCESTER 5, MASS.

▼ BREVITY—Identify by IEN - 13085 If you write the maker ▼



ALL MADE TO Starrett STANDARDS OF QUALITY AND PERFORMANCE

By specifying one dependable make, you can be sure of peak performance on all operations involving Hacksaws, Band Saws and Band Knives. The complete line includes all types of hacksaws for hand or power cutting . . . band saws for cutting metal, wood, plastics, contour cutting, friction sawing, etc. . . . and band knives for cutting any soft or fibrous material.

A GUIDE TO GREATER VALUE

All in one handy catalog — complete information plus useful cutting data applying to the entire Starrett line of hacksaws, band saws and band knives. It's free. Write for it today. Address Dept. N.

Starrett

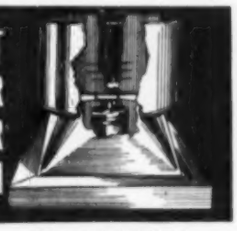
SINCE 1880 · THE WORLD'S GREATEST TOOLMAKERS

THE L. S. STARRETT COMPANY · ATHOL, MASS., U.S.A.

BUY THROUGH YOUR DISTRIBUTOR

▼ BREVITY—Identify by IEN - 13086 If you write the maker ▼

DON'T LET FOUL AIR FOUL UP YOUR PRODUCTION



Automatic Roof Ventilator
Propeller Pitch Adjustable
Balanced Damper Flaps

Eliminating foul air is our JOB. Industrial Air manufactures fans and ventilating equipment to fit your specifications and JOB needs. Available in all sizes, from 14" through 72" in diameter, belt or direct driven operation.

Duct Fans
Direct or Belt Driven
Utility Man Cooler
Portable Man Cooler
Roof Ventilators
Duct Type Fan
Duo Duct

Represented in All Principal Cities

Write Dept. 1202 for complete catalog

THE HARVEY P. BERTRAM CO.

1008 W. Ninth St. Cincinnati, Ohio

BREVITY—Identify by IEN - 13087 If you write the maker

recorders

RECORD TIME • COUNT QUANTITY AND WEIGHT

Actuated by an electrical impulse . . . operates on the output of a scaler, photo tube, limit switch or any similar device. Records counts with relation to time and quantity on a roll of tape . . . automatically resets to zero.

In Radioactive Research, it saves precious man hours and results in greater economy and efficiency.

In Industry, it maintains a permanent record automatically, recording production and time each hour.

Whatever your counting problems, our Engineering Department can adapt these Recorders to meet your particular needs.

Write for interesting Booklet SC 12

AUTOMATIC WEIGHT RECORDERS SINCE 1888

STREETER-AMET COMPANY
4101 N. RAVENSWOOD AVENUE • CHICAGO 13, ILLINOIS

SCALES • WEIGHT RECORDERS • HI-SPEED COUNTERS

BREVITY—Identify by IEN - 13088 If you write the maker

Boost Output with MEAD WORK FEEDERS

Feed Work Fast to Drill or Tap!

As-fast-as-you-can-step-on-a-button the sensational new Mead pneumatic WORKFEEDER delivers, holds, ejects small parts to be drilled, reamed or tapped. Accommodates stampings, castings, screw machine parts, etc. Adjustable to sizes up to 3". Foot automatic control; operator's left hand is free to keep hopper loaded. Write for new Mead AIR POWER Catalog describing "Mead Family" of air operated fixtures and devices.

MEAD SPECIALTIES COMPANY
4114 NO. KNOX AVE., DEPT. EA-121, CHICAGO 41, ILL.

BREVITY—Identify by IEN - 13089 If you write the maker

MARSH GAUGES

-the finishing touch to a good product

Through long experience the users of your product have learned to respect the lasting accuracy of Marsh — the greatest name in pressure gauges. A Marsh Gauge on your product is truly a mark of quality.

The Marsh line embraces pressure gauges and dial thermometers of every required type, construction, size, range, finish.

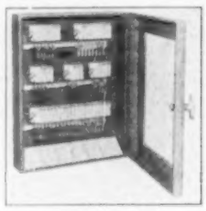
Ask for this catalog covering your instrument requirements

MARSH INSTRUMENT CO.
Sales affiliate of Jas. P. Marsh Corp., Dept. A, Skokie, Ill.
Export Dept., 155 E. 44th St., New York, N. Y.

BREVITY—Identify by IEN - 13090 If you write the maker

STORING . . Metal key cabinet holds 60 keys in orderly assembly

Source: CUSHMAN & DENISON MFG. CO.
153 W. 23rd St., 3rd Floor, New York 11, N. Y.



Cabinet also locks

Slotted tags made of white vulcanized fiber ride in the loops of spiral nickel-wire holders in this new Type C-60 Ke-Master cabinet. Each holder assembly measures about 10 in. in length and presents 20 positions for the tags. Each position will take as many as 3 tags and each tag will hold one or two keys. Capacity of the assembly shown, with one tag and key for each position, is a total of 60. The window-equipped door can be removed and another key section put in its place to increase this capacity to 120.

The tags measure about 1½ by 2 in. and each is equipped with a snap hook. List price is 6 cents each in plain design, 8 cents when the tag is numbered. The cabinet measures 15 by 4½ by 19 inches. List price is about $58 for the 60-position arrangement illustrated. It is about $69 for 120 positions.

BREVITY—Identify by IEN - 13091 If you write the maker

PAINTING . . Flat white enamel for interior walls, trim, woodwork

Source: E. I. du PONT de NEMOURS & CO.
2518 Nemours Bldg., Wilmington 98, Del.

It dries over night

Delux Super-White is a new flat enamel combining the decorative appearance of a flat paint with the hardness and durability of enamel. Application is by brushing. The coat dries to a smooth velvety surface without side sheen. It can be washed repeatedly. Resistance to yellowing is excellent.

BREVITY—Identify by IEN - 13092 If you write the maker

SCREW DRIVING . . Power drive bits, Phillips, Reed and Prince, slotted

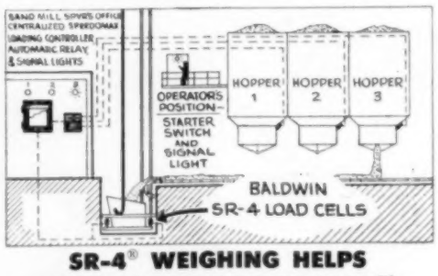
Source: LUDWIG HOMMEL & CO.
70-74 First Ave., Pittsburgh 22, Pa.

Ask for bulletin

Hexagon shanks or threaded shanks are available in a new assembly of stock sizes and designs in the company's line of power-drive bits for screws in an overall size range between No. 1 and No. 14. The hexagon drive is ¼ inch. The threaded drive is ¼ in. 24 or No. 12-24. Overall lengths range from the 1 in. "stubbie" to the 5-in. hexagon-shank design. List price ranges from 20 cents to $1.15. Each bit is made of alloy steel machined, heat treated and finished to provide the required hardness and toughness.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

BREVITY—Identify by IEN - 13093 If you write the maker



SR-4® WEIGHING HELPS INCREASE PRODUCTION 35%

After trying many measuring methods—all unsatisfactory—this foundry now uses a completely automatic weighing system featuring an L&N Speedomax and Baldwin Load Cells. Once controls are set for the correct mix, the hopper doors open and close automatically—weights of each type of sand are recorded . . . and accurately-measured collector buckets are dumped.

RESULT: 35% more sand is mixed each day . . . mixtures are consistent within 1%.

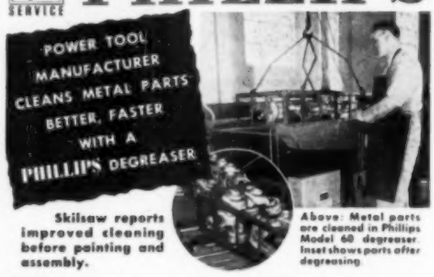
If you have a batch mixing problem, or problems in measuring torque, weight, explosions, pressure—write for information on the many measuring devices that utilize the unique advantages of the SR-4, postage stamp-sized strain gages.

BALDWIN-LIMA-HAMILTON
TESTING HEADQUARTERS
Philadelphia 42, Pa.
In Canada: Peacock Bros., Ltd., Montreal, Quebec

BREVITY—Identify by IEN - 13094 If you write the maker

ENGINEERED SERVICE

PHILLIPS



Skilsaw reports improved cleaning before painting and assembly.

Above: Metal parts are cleaned in Phillips Model 60 degreaser. Inset shows parts after degreasing.

HERE is another case illustrating the high cleaning efficiency of Phillips degreasers. Skilsaw, Inc., Chicago, uses a Phillips Model 60 electric batch-type machine to clean both aluminum and iron castings, steel stampings, shafts and screw machine parts before painting and assembly of the finished product.

Skilsaw reports that the Phillips unit cleans their parts better, as well as 3 to 4 times faster than their former method.

Check into the time and money you can save with Phillips Vapor Degreasing. Our representative will be glad to discuss your parts cleaning problem with you.

SEND FOR YOUR FREE COPY OF NEW ILLUSTRATED DEGREASER BULLETIN!

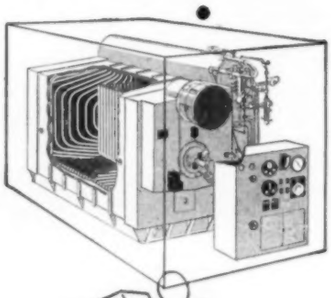
Phillips 3461 Touhy Ave. • Chicago 45, Illinois
MANUFACTURING COMPANY
Vapor Degreasers • Solvents • Parts Washers

BREVITY—Identify by IEN - 13095 If you write the maker

Standardized Steam

for loads of 2,800 to 25,000 per hr.

IT'S THE *NEW* B & W SHOP-ASSEMBLED UNIT



B&W Integral-Furnace Boiler, Type FM

Note these *Cost-Saving* features

Saves Erection Time and Cost • Meets Wide Range of Services • Handles Quick Load Changes • Fast Steaming • Low Maintenance • Easy Accessibility • Suitable for Outdoor Service • Burns Oil and/or Gas • Saves Fuel • Saves Space • Safe, Automatic Operation.

SEND FOR BULLETIN G-72. detailing the many advantages of this new B&W creation in low-cost steam generation. The Babcock & Wilcox Company, 85 Liberty Street, New York 6, N. Y.

BABCOCK & WILCOX
Helping Industry Cut Steam Costs since 1867

G-548

BREVITY—Identify by IEN - 13097 If you write the maker

See the new Heavy Duty No. 500 Speed Way 1/2" Speed Drill

- All Ball Bearing.
- Wide-face Helical Gears—precision hobbed from nickel alloy steel.
- Integrally Die Cast Aluminum Body and Frame—all structural and supporting members die-cast-in.
- More Powerful. Heavy Duty Motor 5½ Amp. input and ⅛ H.P. output.
- No. 34B Jacobs Geared Chuck and finest Electrical Equipment.
- Compact, Powerful, Light—weighs only 10 lbs.

WRITE FOR CATALOG

SPEEDWAY MFG. CO.

1885 So. 52nd Avenue, Cicero 50, Illinois

BREVITY—Identify by IEN - 13098 If you write the maker

IMMEDIATE DELIVERY

on RCA high-frequency

ELECTRONIC GENERATORS

for soldering, brazing, heat-treating

Available Today . . . NOW. For immediate shipment from RCA, Camden, N. J., direct to your plant. High-frequency electronic generators in sizes of 15 and 75 KW for induction heating of metals.

Big, sturdy high-power units. These generators are heavy-duty "work horses," built to stand up under long, tough production schedules. Time-tested designs. One-unit construction for compact, easy, space-saving installation. Built and backed up by RCA . . . pioneer in high-frequency heating. Nationwide service available through RCA Service Company.

Do you need applicators, too? RCA has developed dozens of different applicators for electronic heating. Ask us about our proved designs . . chances are there is one already worked out to fit your needs.

Generator stock limited. Act NOW. Production of RCA electronic heating units is being stepped up to meet ever-increasing demand. But even so, the supply of completed units for immediate delivery is definitely limited. So if you need electronic heating equipment NOW . . . then NOW is the time to act.

Contact RCA at once. Get your order in fast. First come, first served. Do it NOW.

More Information? Mail Coupon TODAY

RCA Engineering Products Dept. 141X, Camden, N. J.
Without obligation, please air-mail me complete information on your RCA electronic heating equipment *available for immediate delivery,* for the application stated below:

To be used for _____

KW power required _____

Name _____ Title _____

Company _____

Address _____

City _____ State _____

RADIO CORPORATION of AMERICA

CAMDEN, N. J. INDUSTRIAL EQUIPMENT SECTION

BREVITY—Identify by IEN - 13100 If you write the maker

TESTING . . Servo-mechanism kit for laboratory and research application

Source: AUTOMATIC TEMPERATURE CONTROL CO. 5212 Pulaski Ave., Philadelphia 44, Pa.

Aid for designers

Measurement of straight-line motions such as displacement of a bellows or diaphragm, the motion of a float, the tip travel of a bourdon tube, the action of a weigh beam, can be made with this new Atcotran servo-mechanisms kit. It consists of a differential transformer, a standard servo-mechanism, an amplifier, a terminal block, a mounting block and a four-wire connection cable, all for assembly into a null-balance circuit.

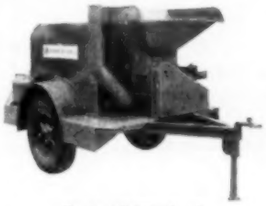
Linear movement of the armature in the transformer, in either direction from center, results in an ac. signal in proportion to the amount of motion in a phase relative to the direction of the motion. The signal is amplified and the resulting output actuates the servo-mechanism motor which will then run in either direction, depending upon the phase of the signal, until balance is restored.

The equipment can be assembled to remotely position a dial pointer, a recorder pen, a mechanical counter, a printing mechanism, a switch cam, a pulley, a hydraulic or pneumatic valve with accuracy to 0.2 per cent of full travel on the 333-deg. output-shaft rotation. There is no time lag between the original signal and its resultant indication. Transmitters and receivers can be installed as much as 5,000 ft. apart with negligible signal loss.

BREVITY—Identify by IEN - 13101 If you write the maker

CONSTRUCTION . . Mobile unit for asphalt pavement patching work

Source: HETHERINGTON & BERNER INC. 725 Kentucky Ave., Indianapolis 7, Ind.



Keeps mixture fresh

Moto-Patcher is a new mobile unit designed for use behind a truck in road and yard maintenance. Capacity is about 10 ton of freshly mixed material per hour. Dimensions are about 12 by 6 by 6 feet. Weight is 2,700 pounds.

The assembly consists of a feed hopper, a mixing conveyor, a 400-gal. bitumen tank and a tank heater using either bottled gas or kerosene. A mixer runs through the bottom of the bitumen tank to provide a drying effect for the aggregate. The bitumen itself can be circulated when the machine is not mixing.

The mixed material is deposited on a pan at correct height for shoveling or can be dropped directly onto a yard or road surface. Aggregate to be run through the machine can be shoveled into the hopper or fed into it by a small elevator that is available on specification. The mixing conveyor is driven by a Briggs & Stratton gasoline engine. The circulating pump is a Viking unit rating 10 gpm.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 88

BREVITY—Identify by IEN - 13102 If you write the maker

Keep hands out of danger zone

. . . eliminate one hand operation —increase production

Power Presses—Equip your power presses with Schrader pneumatic press controls for a bigger, better and safer day's work. The hands that feed the die must also operate the control valves, located outside the danger zone, to actuate the press.

Kick and Foot Presses—Schrader also supplies a hand operated pneumatic control especially for foot presses. This control eliminates fatigue, delivers a uniform ram pressure each stroke, reduces spoilage. Comes in a complete easily installed set.

Write for more information and literature about Schrader Press Controls.

Schrader Pneumatic Controls may also be obtained in complete sets for foot operation, or for combined hand and foot operation.

A. SCHRADER'S SON

Dept. D-1, 458 Vanderbilt Avenue, Brooklyn 17, N. Y.
Division of Scovill Manufacturing Company, Incorporated

BREVITY—Identify by IEN - 13103 If you write the maker

How sure are you of your steam supply?

When your boiler calls for water, your entire plant depends on the boiler feed pump . . . that's when quality pays off. You can depend on the Roth Boiler Feed Unit because of the user-proven reliable Roth boiler feed pump. Thousands of boilers in plants such as laundries, dairies, cleaning plants, food processing—across the country rely on the dependable Roth Boiler feed pump. Check your boiler feed pump now. Be sure of your steam supply . . . for dependability, use Roth Boiler Feed Pump or install the complete "package" Roth Boiler Feed Unit.

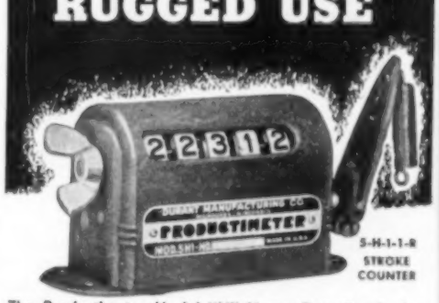
Insist on these quality features in your boiler feed system: High pressure, long life, precision built pump. Guaranteed performance. Strainer that assures flexible connection to suction, dampens vibrations. Machine welded, heavy gage steel receiver.

Write us today, or ask your dealer, for complete data!

ROY E. ROTH CO. 2430-L 4TH AVE. ROTH PUMPS ROCK ISLAND ILLINOIS

BREVITY—Identify by IEN - 13104 If you write the maker

Sturdily Built for RUGGED USE



The Productimeter Model "H" Heavy Duty line is designed for hard usage and long service. Constructed of highest quality materials . . . they are rigidly tested before leaving our factory.

There is a Productimeter for every counting job . . . always accurate . . . always dependable. They eliminate all "guess-work" . . . insure profitable operations and more efficient use of man-hours in your plant.

PRODUCTIMETERS *Count Everything*

Send for Catalog No. 100.

DURANT MANUFACTURING COMPANY

1930 N. Buffum Street, Milwaukee 1, Wisconsin — 130 Orange Street, Providence 3, R. I.

BREVITY—Identify by IEN - 13105 If you write the maker

HIGH EFFICIENCY

RIGHT ANGLE DRIVES

PHILADELPHIA SPIRAL-BEVEL-HELICAL SPEED REDUCERS

Dependable . . . for transmitting power at right angles, either horizontally or vertically. Single, double and triple reductions with standard ratios from 1.5 to 1 up to 238 to 1. Single reduction type employs only spiral bevel gears. Helical gears used on second and third reductions of double and triple types. Single reduction unit for example is 98% efficient,—so often smaller frame size motors can be used than with other comparable types.

Bulletin SB-50 gives complete details . . . write on your business letterhead

PHILADELPHIA GEAR WORKS, Inc.

ERIE AVENUE AND G STREET • PHILADELPHIA 34, PA.

NEW YORK • PITTSBURGH • CHICAGO • HOUSTON • LYNCHBURG, VA.

In Canada: William and J. G. Greey Limited, Toronto

BREVITY—Identify by IEN - 13106 If you write the maker

YOU CAN TAKE IT WITH YOU!

BECKER
Self-Contained

SPRAY GUN

PRESSURE-POWERED
with
INEXPENSIVE
CO2
CARTRIDGE

This completely portable spray gun is saving money in many industrial uses. Excellent for maintenance operations. Requires no compressor, motor, or electrical outlet. Has 21 liquid ounce capacity, heavy-gauge, steel container; cast aluminum head; brass and stainless steel inserts. Low cost CO2 cartridge sprays up to one container full, depending on viscosity. Use it for paint, varnish, enamel, oil, fire-proofing, rust-proofing, disinfecting. If your industrial distributor can't supply you, order direct and we will ship postpaid. (Extra CO2 cartridges 10 for $1, postpaid, or buy them from your local dealer.)

ONLY
$15.95
with three cartridges

SULLIVAN BECKER CO., Dept. 191-M, Kenosha, Wis.

BREVITY—Identify by IEN - 13107 If you write the maker

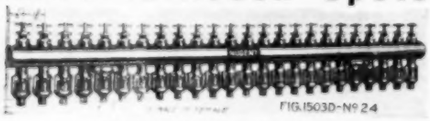
FOR *Safety-Economy*
PATCH OR RESURFACE WITH . . .

- *READY MIXED FOR INSTANT USE*
- SAFETY: FLINTZ is a smooth hard NON-SKID or NON-SLIP surface that cuts down accidents. RESURFACES over worn concrete wood or metal floors with little or no down-time. No interference.
- *SAFE WET OR DRY FLOORS WITH FLINTZ*
- ECONOMICAL: Only necessary to cover heavy travelled aisles or worn areas. FLINTZ spreads thin to a feather-edge that will not crack under heavy loads. Goes farther and costs less per square foot. Result: years of satisfactory service and hard usage. *ALL DURA TRED PRODUCTS GUARANTEED. Write for literature.*

dura-Tred Co. 352 No. Central Pk. Blvd. Chicago 24, Ill.

BREVITY—Identify by IEN - 13108 If you write the maker

LUBRICATE
Hard-to-Reach Spots



with NUGENT Multiple Oilers

For machinery with many enclosed or hard-to-get-at bearings, you can reduce lubrication costs with a Nugent Multiple Oiler. Oil from a pump or reservoir is piped into the Oiler and is fed to the bearings by means of tubing through independently adjustable needle valves.

Nugent Multiple Oilers are furnished in a variety of types with any number of feeds to meet every requirement.

Write for descriptive literature.

NUGENT TRADE MARK Est. 1897

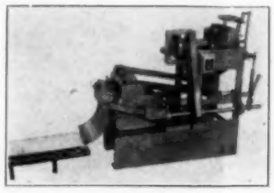
Wm. W. *Nugent* & Co., Inc.
418 N. Hermitage Ave CHICAGO 22, ILLINOIS

Oil Filters, Oiling and Filtering Systems, Telescopic Oilers, Oiling Devices, Sight Feed Valves, Flow Indicators . . . Representatives in Principal Cities

BREVITY—Identify by IEN - 13109 If you write the maker

DIE CASTING . . Automatic machine to cast, trim, deliver lead battery grids

Source: WIRTZ MFG. CO.
1107 24th St., Port Huron, Mich.



1,500 grids per hour

Trimcaster is a new motor - driven automatic machine to produce automotive-type storage-battery grids at the rate of 1,500 grids per hour. Molten lead is pumped to a dipper on the machine by a piston - type pump. The dipper measures the lead into the mold as soon as it closes. Excess lead flows back to the melting pot. A revolving cam opens the mold after a short cooling interval and ejects the casting to a conveyor belt.

The belt carries the grid to a trimming head and drops it into the open dies. They close and trim off the gate. The grid is then ejected and separated from the trimmings.

The machine is driven by a ½-hp., 220-volt, 3-phase ac. motor. Overall dimensions are 40 by 9 by 30 inches. The mold is designed so it can be opened for smoking or cleaning without removal from the machine. It can be changed in about 5 minutes. The trimming die will take all grid heights.

BREVITY—Identify by IEN - 13110 If you write the maker

SOLDERING . . Liquid flux for brass, copper, iron, nickel steel

Source: FARRELLOY CO.
1249 N. 26th St., Philadelphia 21, Pa.

Lists at $2.25 per gallon

Lytestone is a new liquid flux buffered to reduce corrosive action. It is designed for use with low-tin solders. It lowers surface tension of the molten solder, will not oxidize under the required melting heat. Its residue is soluble in water. The liquid can be carried on top of a metal bath for dip soldering.

BREVITY—Identify by IEN - 13111 If you write the maker

HEATING . . Electric element for immersion in corrosive solutions

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.

Relocates easily

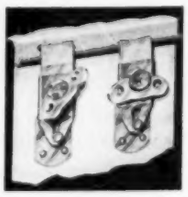
Lead sheath measuring ¼ in. in thickness covers and protects the element in this new electric heating assembly. A new terminal housing replaces the sealing cup employed in a previous design. Element length ranges from 23 to 46 in. in three available types. These include four ratings between 2 and 6 kw. for use in alkaline baths, a 5-kw. unit for nickel and copper-plating baths, three ratings of 2, 4 and 6 kw. to heat mild sulfuric acid. All are designed for operation on 230-volt input.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 56

BREVITY—Identify by IEN - 13112 If you write the maker

Have you a similar fastening problem?

File: Simmons LINK-LOCK



When the armed forces needed a positive, high-strength fastening device for instrument housings, transit cases, and storage boxes, Simmons developed LINK-LOCK. This brand-new device works with fingertip pressure, furnishes up to 450-lb. pull-down pressure. Open or closed, it always lies perfectly flat.

LINK-LOCK may be the answer to your fastening problem. If your design involves heavy fastening pressures, watertight sealing, high strength, resistance to impact, write for LINK-LOCK DATA SHEET.

Simmons Fastener Corporation, 1758 No. Broadway, Albany 1, New York

Simmons | LINK-LOCK CLICK-LOCK SWING-LOCK POSI-LOCK

FASTENERS WITH USES UNLIMITED

BREVITY—Identify by IEN - 13113 If you write the maker

ask star

FOR STAINLESS STEEL FASTENINGS OF ALL TYPES

—RIGHT OFF THE SHELF

Small or large quantities. Fast service on special screw machine products.

Cap Screws • Machine Screws • Sheet Metal & Wood Set Screws • Nuts, Washers, Etc.

Class 3
—5/80
—1/72
—2/64
AN Drilled Heads

WRITE, WIRE OR PHONE TODAY

Star STAINLESS SCREW CO.
212 UNION AVENUE • ARmory 4 - 1240 • PATERSON 2, N. J.

BREVITY—Identify by IEN - 13114 If you write the maker

FABRICATED SCREENS STRAINERS

TO YOUR SPECIFICATIONS

- PRODUCTION RUNS
- HIGH QUALITY

NEWARK offers a "complete package" service in the design and manufacture of fabricated woven wire parts. We design and manufacture screens and strainers for all types of service; for handling oil, water, gasoline, air, corrosive gases or steam.

We manufacture the wire cloth, thus insuring its accuracy; we also do all the necessary cutting, forming, soldering, stamping, punching, welding and seaming. In other words, it's a NEWARK job from start to finish.

Newark Wire Cloth COMPANY

351 Verona Avenue • Newark 4, New Jersey

NEWARK ACCURACY

▼ BREVITY—Identify by IEN - 13116 If you write the maker ▼

Specifications for a Good IMMERSION HEATER

SEAMLESS STEEL OR COPPER BLADES (tubes)—strong, rigid, durable—giving maximum protection to their internal structure. One, two or three blade styles, for oil or water.

NICKEL-CHROME RESISTANCE WIRE in high-quality refractory tubes, definitely locating the elements in relation to the metal casing for its entire length.

ALL FREE SPACES filled with refractory powder by method that assures maximum heat conduction and absence of dead air.

TERMINAL HEAD welded or brazed to blades. Removable outlet box (with or without switch) can be rotated to suit wiring. Heat can be uniformly maintained for entire length of unit or concentrated at selected portions.

• • •

Those are the highlights of the TRENT specifications—proven in hundreds of different Immersion Heater applications to provide MORE UNIFORM HEAT, with minimum maintenance. Write for Bulletin 74-TA.

TRENT INC
Electrically Heated Industrial Equipment
247 LEVERINGTON AVE. PHILA 27 PA

▼ BREVITY—Identify by IEN - 13117 If you write the maker ▼

pre-color before you fabricate

ENAMELSTRIP

STEEL, ALUMINUM, AND BRASS PRE-FINISHED

COLOR COIL

SO MANY ADVANTAGES!

Yes, you can fabricate metal parts and products more easily in any color, any type of chemical finish . . . and save time and money! Enamelstrip's exclusive process of pre-treating and finishing continuous-feed metal coil achieves a flexible, lustrous finish which withstands the stresses of drawing, bending and forming without cracking or peeling. Users of ENAMELSTRIP can forget such costly, time-consuming operations as hand feeding, shearing, cleaning, tumbling, dipping, rustproofing, baking, drying.

WRITE FOR ENAMELSTRIP BULLETIN TODAY

See how easy it is both to speed up and improve production.

Any metal in any color coated and slit to your specifications.

National Sales Representatives

THE COATED COIL CORPORATION
511 West 30th St., New York 1 • Phone: LOngacre 5-3161

▼ BREVITY—Identify by IEN - 13119 If you write the maker ▼

SOLDERING . . Electric iron with button controlled booster element

Source: VARI CORP.
621 Fourth Ave. S., Dept. RH, Minneapolis 15, Minn.

Lists complete at $7.75

Dual elements rating 25 and 75 watts are assembled within the ⅝-in. copper tip on this new Type R-115-A electric iron. The smaller element is connected directly to the extension cord on the iron. It will bring the tip up to 500 deg. F. in about 35 sec. after the cord has been plugged in to a power circuit. The additional 75 watts of heat are added as desired by the operator when he presses a pushbutton at the rear of the Durez molded plastic handle.

The iron is available for operation on 110-volt or 30-volt ac. and dc., the former for standard plant use, the latter for aircraft and marine power circuits. Various designs of interchangeable tip are available. The assembly includes a collar on the shank so the iron can be laid down without requiring a stand. Overall length is 8½ inches. Weight is 9 ounces. Replacement tips list at $1.

▼ BREVITY—Identify by IEN - 13120 If you write the maker ▼

PROTECTING . . Skin cream for use on a worker's hands and arms

Source: SABERN PRODUCTS CO.
5509-13 Euclid Ave., Cleveland 3, Ohio

Packaged in 1 and 10 lb. cans

Man-O is a new cream containing lanolin for application on a worker's hands and arms prior to starting a work shift. It prevents penetration by grime, grease, chemicals. It also protects precision tools and finished surfaces from rust caused by finger marks. It washes off at the end of the shift using soap and water.

▼ BREVITY—Identify by IEN - 13121 If you write the maker ▼

PIPE FITTING . . Forged steel union, 300 lb. steam, 2,000 cold water, gas

Source: CAPITOL MFG. & SUPPLY CO.
151 W. Fulton St., Columbus 15, Ohio

Sizes range from ⅛ to 2 in. in the company's new 300-lb. threaded steam pipe union. It is available in zinc-coated and black-finish design, the latter finished with a corrosion resistant treatment. Each union applies a ground-steel joint on a brass seat as shown in the illustration.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 13122 If you write the maker ▼

HUMIDITY — where you need it — when you need it!

New ATOMICK HUMIDIFIER

Does dry air raise hob with your production? . . . seriously interfere with the quality of your product?

. . . Then try our new Atomick Humidifier! — simplest, most practical method yet devised for adding necessary humidity to indoor atmospheres.

Compressed air operated, a one spray outlet atomizes up to 1¼ gals. of water per hr. The 4-head sprays handle 4 times as much. *With automatic control, you can maintain any humidity your work requires. Easily installed — simply suspend units from the supply lines.*

Write today for Maid-O'-Mist Bulletin 900 giving full details and prices.

MAID-O'-MIST INC.
3209 N. PULASKI RD.
CHICAGO 41, ILLINOIS

AUTOMATIC HUMIDIFIERS FOR ALL TYPES OF HEATING SYSTEMS

▼ BREVITY—Identify by IEN - 13123 If you write the maker ▼

SAVE MANPOWER BY USING AUTOMATIC CIRCUIT CONTROL

EFFICIENT USE OF MANPOWER is more important today than ever before. Utilize this valuable manpower to the fullest by doing away with unnecessary *manual operation*—where automatic time control can do the job.

GENERAL ELECTRIC time switches furnish automatic time control for almost any job—process timing, pump and blower control, oven or conveyer control, plant lighting, floodlighting.

YOU'LL SAVE TIME and avoid the trouble of switching equipment on and off manually . . . you'll save in power costs that mount up when power is left on overtime.

General Electric offers you a complete line of time switches designed to fit *your* timing needs. See your G-E representative for more information. General Electric, Schenectady 5, N.Y.

T-47 TIME SWITCH: inexpensive, efficient control; for one ON-OFF operation in 24 hrs.

T-27 TIME SWITCH: handles almost any timing problem; rugged, versatile, convenient.

GENERAL ELECTRIC

▼ BREVITY—Identify by IEN - 13124 If you write the maker ▼

Relays BY GUARDIAN SERVE ALL FRONTS!

WHETHER FOR PEACE OR DEFENSE a great responsibility is vested in electrical control. In this era of defense there is an urgent demand for electrical controls in *quantity* with the highest degree of *quality* at economical cost. How efficiently Guardian Electric has moved to meet these requirements is convincingly told by the millions of Government Approved Controls by Guardian now being used in planes . . . in tanks . . . in communications . . . in bomb releases . . . in radar . . . in guided missiles . . . in gun controls. Also by "Guard-A-Seal" *hermetically sealed* relays. Write.

GUARDIAN ELECTRIC
1620-P W. WALNUT STREET CHICAGO 12, ILLINOIS
A COMPLETE LINE OF RELAYS SERVING AMERICAN INDUSTRY

▼ BREVITY—Identify by IEN - 13125 If you write the maker ▼

UNBRAKO

heads won't twist off, either

Controlled fillet and continuous grain flow, following the contour of the UNBRAKO head, eliminate the straight planes of weakness along which shear can occur. Heads are stronger, won't twist off. And both heads and threads have higher tensile and greater resistance to fatigue.

Write for your UNBRAKO Catalog.

SPS STANDARD PRESSED STEEL CO.
JENKINTOWN 14, PENNSYLVANIA

BREVITY—Identify by IEN - 13126 If you write the maker

WRITE TODAY!

DICO'S WHEEL CATALOG Free!

A UNIQUE CATALOG SIMPLIFYING YOUR WHEEL ENGINEERING PROBLEMS

A MODERN LINE OF INDUSTRIAL RUBBER WHEELS DIAMETER 6"—18"

DICO CORPORATION
402 S.W. 16th ST., DES MOINES 5, IOWA

BREVITY—Identify by IEN - 13127 If you write the maker

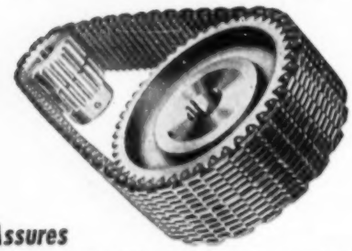
Ingersoll specializes in SPECIAL STEELS for Industry

Alloy Steels . . . Armor Plate . . . Clutch Plate Steels . . . Tillage Steels . . . Soft Center Steel . . . Shovel Steels . . . Knife Steels . . . Saw Steels, including High Speed Hack Saw Blade Steels . . . TEM-CROSS Steel . . . Stainless Steels . . . IngAclad Stainless-Clad Steel.

Ingersoll STEEL DIVISION
BORG-WARNER CORPORATION
NEW CASTLE, INDIANA

BREVITY—Identify by IEN - 13128 If you write the maker

WHITNEY
SILENT CHAIN



Assures
Efficient, Positive Power Transmission

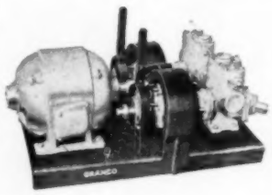
Regardless of your drive problems, Whitney Silent Chain will meet your particular requirements. These tough, rugged chains deliver full power without friction loss or slippage. Their positive grip helps maintain product uniformity. They withstand shock loads without breakage . . . give long life and cut maintenance to the bone. And remember Whitney Cut Tooth Sprockets complete the combination assuring efficient power transmission. It will pay you to *standardize* on Whitney. Write for complete information.

WHITNEY CHAIN COMPANY
202 Hamilton Street Hartford 2, Connecticut

BREVITY—Identify by IEN - 13129 If you write the maker

PUMP . . Positive rotary design, twin assembly for liquid transfer

Source: GRANBERG CORP.
1311 67th St., Oakland 8, Calif.



New twin assembly of the company's rotary pump, previously described IEN-10884-49, is shown in the illustration. Available also are motor-driven assemblies employing three or four pumps to make up a compact unit for pump-house duty in liquid transfer. Three pump capacities are 90, 120 and 200 gpm. per pump with drive at 750, 600 and 400 rpm.

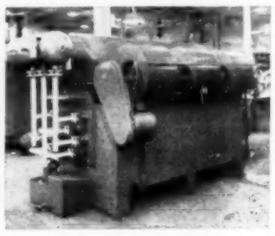
Smallest two-pump assembly occupies 20 by 40 in. of floor space. The largest four-pump unit measures 28 by 96 inches. The drive takes a 3 to 7½-hp. motor. Weight without the motor is 200 to 1,000 pounds. Each pump is individually controlled by a hand-operated clutch. The drive mechanism can be supplied with bronze or self-aligning ball bearings.

A bronze knuckle, similar in action to a universal joint, is mounted between a drive shaft and an annular stub shaft in the spherical pumping chamber. The two sides of the knuckle set up alternate opening and closing action to handle the connected fluid. Any light or heavy liquid that will flow through a pipe line can be pumped. Pipe sizes are 2, 2½ and 3 in. for the line of new pumps.

BREVITY—Identify by IEN - 13130 If you write the maker

REFRIGERATING . . Cooling equipment delivers cold air containing moisture

Source: NIAGARA BLOWER CO.
3117 Chrysler Bldg., New York 17, N. Y.



The air retains its moisture

New design of the company's No-Frost spray cooler has been developed to serve refrigerated spaces where products sensitive to moisture content of the air are stored. Representative are foods liable to dry out, shrink or discolor in cold dry air. The new equipment differs from previous designs in that the air to be chilled enters through the blowers and is blown over the refrigerating coils and through the spray of No-Frost liquid solution. The action prevents condensation of water and the chilled air, which may be as low as minus 20 deg. F., passes directly from the spray chamber into the space being served.

Eight sizes range in air-handling capacity from 2,000 to 24,000 cfm. Refrigerating capacity is basically 1,500 to 18,000 btu. per hr. per 1 per cent of temperature difference between the air and the refrigerant. Required floor space measures 5½ to 45 sq. ft. for the new machine assembly.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

BREVITY—Identify by IEN - 13131 If you write the maker

Put Your Finger on Material Handling Costs IN YOUR OWN PLANT!

Let us send you—free and without obligation—our brand new "Material Handling Analysis Guide" that helps *you* study material handling problems in your own plant...and reveals how you can improve material handling efficiency and save money in *your* business.

Add Man-Hours Without Increasing Workloads

Find out how you can join those in all lines of industry who have already found the way to eliminate back-breaking, old-fashioned, hand handling . . . speed production . . . move more goods faster . . . add to productive capacity without increasing personnel workload.

"101" Transporter
A PRODUCT OF AUTOMATIC

WRITE NOW FOR YOURS—
Automatic
109 West 87th Street, Dept. X-1
Chicago 20, Illinois

BREVITY—Identify by IEN - 13132 If you write the maker

A Chair Designed to Make History

NEW Clarin TABLET ARM CHAIR that FOLDS

Will make its mark as one of the most useful adjuncts to portable seating ever devised.

This FOLDING TABLET ARM CHAIR is just the thing for—
SALES CONFERENCES
DEPARTMENTAL MEETINGS
GROUP DISCUSSIONS
LECTURES
TAKING MINUTES, NOTES, DICTATION, etc.

The arm is an integral part of the chair—NOT AN ATTACHMENT. It may be adjusted to several positions—
1) Raised upright to permit free ingress and egress.
2) Completely lowered to the side.
3) Folded flat against the seat for compact storage.

Doubly Reinforced Steel Frame with Plywood Seat and Solid Wood Arm. Available with Seat only, or Seat and Back upholstered. Rubber Feet prevent noise and marring.

Folds to 3" thin.

The Only Folding Chair of its kind anywhere.

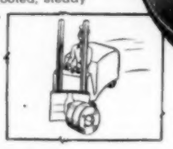
Write today for folder, prices and delivery date.

CLARIN MFG. COMPANY
4640 W. Harrison St., Dept. 30, CHICAGO 44, ILL.

BREVITY—Identify by IEN - 13133 If you write the maker

tough tires for tough jobs
MONARCH UNIVERSAL
pressed-on tires

The low ton-mile cost on these babies makes good reading on your cost sheets. Monarch Universals combine exceptional wear resistance with good shock absorption. They are stable, sure-footed, steady on the high lifts.



cut the cost of bumps
MONARCH MONO-CUSHION
pressed-on tires

These big, burly cushion tires literally soak up shock and shock load, reduce vehicle maintenance as much as 40%. They're easy on loads, floors, and drivers, too—cut costs all the way around.

soft touch for floors
MONARCH CURED-ON
industrial tires

Your hand-powered vehicles pussyfoot silently over your floors on Monarch Tires, never chip or groove floor surfaces. And these long-wearing tires are easy on people—take up "road" shock, make caster wheels swivel easily.

YOUR BEST SOURCE for replacement tires is the manufacturer of your vehicles, who can supply you, through his service branches, with Monarch Tires engineered for your application.

THE MONARCH RUBBER COMPANY
201 LINCOLN PARK • HARTVILLE, OHIO

SPECIALISTS IN INDUSTRIAL SOLID TIRES AND MOLDED MECHANICAL RUBBER GOODS

BREVITY—Identify by IEN - 13135 If you write the maker

Rubber Parts NO MOLD COST

- Short Runs
- Experimental Work
- Change in Present Parts

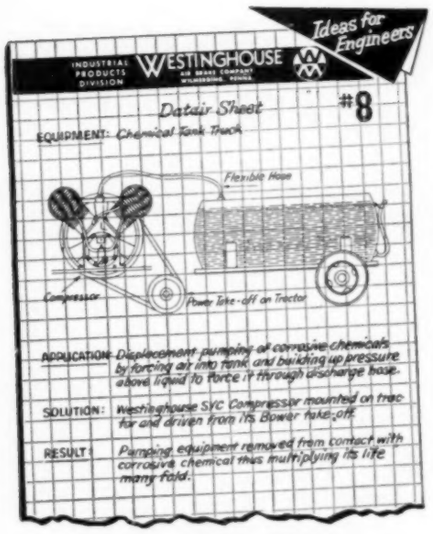
Can now be produced without the usual high cost of molds or forms. Small charge for pattern if not supplied by customer.

CONDUCTIVE RUBBER SPECIALISTS

GALLEHER, Inc.

4782 Warner Rd. Cleveland 25, Ohio

BREVITY—Identify by IEN - 13136 If you write the maker



So often AIR Solves the Control Problem!

In case after case, Plant Engineers are using W A B Pneumatic devices to solve control problems. The case presented above is an example. Our Engineering Data File provides information concerning this and many others. Sections of it may be applied to your problems. Write for a complete file. No charge.

FREE

This Engineering Data File

WRITE

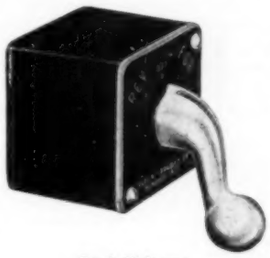
INDUSTRIAL PRODUCTS DIVISION WESTINGHOUSE AIR BRAKE COMPANY WILMERDING, PENNA.

Factory Branch: EMERYVILLE, CALIF.
Distributors throughout the United States . . . Consult your Classified Directory. Distributed in Canada by: Canadian Westinghouse Co., Ltd., Hamilton, Ontario.

BREVITY—Identify by IEN - 13138 If you write the maker

MOTOR CONTROL . . Reversing switch for ac. and dc. motors, 2 hp. or less

Source: ALLEN-BRADLEY CO.
1312 S. 2nd St., Milwaukee 4, Wis.



For built-in use

Bulletin 350 Style A is a new drum-type switch, the equivalent of a 3-pole double-throw assembly for across-the-line starting and reversing duty. It can be used for single-phase motors rating ¾ and 1 hp. on 110-volt single-phase ac. or ¾ and 2 hp. on two or three-phase 220, 440 or 550-volt ac. It applies also for ¼ and ½-hp. motors operating on 110 or 220-volt dc., shunt, series or compound wound.

Contarts are silver-alloy double-break design. The housing is made of Bakelite. It encloses eight fixed contacts and a moving-contact assembly. Overall dimensions are 2¾ by 2¾ in. in width and height. The housing is 2¼ in. in depth. The operating handle projects about 1⅝ in. to the front.

BREVITY—Identify by IEN - 13139 If you write the maker

FIRST AID . . Spray for burns, wounds, contains benzocaine in liquid

Source: AMERICAINE INC.
1314-18 Sherman Ave., Evanston, Ill.

For field kit and dispensaries

Americaine trade names a new liquid anesthetic containing 20 per cent of dissolved benzocaine, 39 per cent of oxyquinoline benzoate in a bland water-soluble base. Four oz. of this liquid and 7 oz. of inert propellent are packaged in a cylindrical container equipped with a push-button valve. When this valve is opened the propellent in the container delivers the anesthetic liquid in a fine spray. When the container has been emptied it is discarded.

BREVITY—Identify by IEN - 13140 If you write the maker

CONNECTOR . . Detachable design applies on welding cable, has cam lock

Source: EMPIRE PRODUCTS CO.
P. O. Box 98-F, Cincinnati 36, Ohio

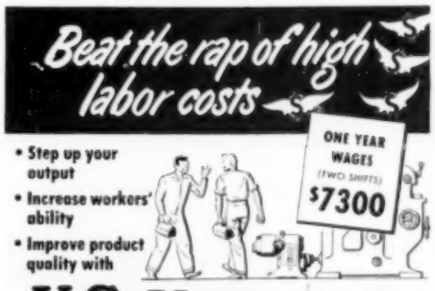
Locks on push and turn

Contact pressure of approximately 600 lb. per sq. in. is obtained by the cam action in this new Cam-Lok welding-cable connector. One of two cams exerts pressure parallel to the axis. The other acts perpendicular. General-purpose and heavy-duty units are included in the design. They are interchangeable for 1/0 through 3/0 cable and No. 2 through 1/0 whip ends.

Long runs of cable can be graduated down for flexibility and minimum voltage drop. Adaptors or reducers are not needed. Construction is brass with pin-assembled insulation.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 13141 If you write the maker



- Step up your output
- Increase workers' ability
- Improve product quality with

U.S. VARIDRIVE

Assume you are paying operators $1.75 per hour for two 8-hour shifts per day. That's $7300 annually for labor—probably far more than the machine cost. By installing a *U. S. Varidrive Motor* you can offset high and rising labor costs to the tune of 10%, 20%, 30% or more. Varidrive gives you infinite changeable speeds instantly. Operator efficiency is increased; so is production.

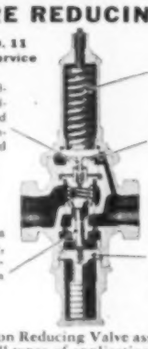
In countless instances the U. S. Varidrive Motor has paid for itself within a few weeks by stepping up output. Our Bulletin tells you why.

2 TO 10,000 RPM
⅛ to 30 hp

U.S. ELECTRICAL MOTORS Inc.
Box 2058, Los Angeles 54, Calif. or Milford, Conn.

BREVITY—Identify by IEN - 13142 If you write the maker

5 Quality Features THAT ASSURE LOW COST PRESSURE REDUCING SERVICE



The No. 11 Mason Reducing Valve assures precise pressure control in all types of applications. Pilot operation assures fast, accurate response to controlled pressure variations. Initial pressure ranges up to 250 lbs. reduced to any desired pressure between 5 and 75 lbs. or 75 and 225 lbs. Bronze bodies, screwed connections in sizes ½" to 2". Iron bodies, 250 lb. flanges in sizes 2½" to 4". Maximum working pressure 250 lbs. @ 450°F.

Your local Mason-Neilan industrial distributor is ready to serve you from his stock

MASON-NEILAN REGULATOR COMPANY
1188 ADAMS STREET, BOSTON 24, MASS., U. S. A.

BREVITY—Identify by IEN - 13143 If you write the maker

Will You Have Enough GAS this Winter?

THIS OVEN DESIGNED FOR GAS . . . BUT IT'S FIRED WITH OIL BY VAPOFIER

The S.O.S. Company, in Chicago, has insured production against losses due to seasonal gas curtailment by installing Vapofier as gas standby. Change-over to and from gas is made without loss of flame at the burners in a matter of seconds. The same piping, burners, automatic controls and safety devices are utilized.

Capacities from 70,000 to 4,000,000 B.T.U.'s per hour

Should your processing be annealing, galvanizing, heat treating, glass manufacturing, industrial drying, paint, core or bread baking, there's a Vapofier to fit your needs.

Do away with Gas shortages *this winter*. Send for FREE booklet "Make Your Own Gas With Vapofier."

VAPOFIER CORP., 10326 S. Throop St., Chicago 43, Ill.

BREVITY—Identify by IEN - 13144 If you write the maker

FLEXLOC

SELF-LOCKING NUTS

STAY **TIGHT**

AFTER **171,360,000** VIBRATIONS AT 4000 CYCLES PER MINUTE

Plain nuts with lock washers loosened after only ONE HOUR of 4000-cycle-per-minute operation on the vibrator of a concrete block machine at the plant of the Bethayres Concrete Block Co., Bethayres, Pa.

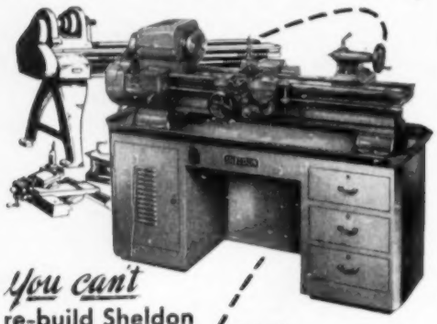
When FLEXLOC Self-Locking Nuts were installed, they were *still tight* when the machine was torn down for rebuilding after 6 weeks operation—at 4000 C.P.M., 17 hours a day, 7 days a week!

If you have an application where nuts loosen or back off, try FLEXLOC, the one-piece, all-metal STOP-and LOCK-NUT "that won't work loose."

Send for Bulletin 619-A today.

SPS STANDARD PRESSED STEEL CO.
JENKINTOWN 14, PENNSYLVANIA

BREVITY—Identify by IEN - 13145 If you write the maker



You can't
re-build Sheldon
Efficiency into an old lathe...

This practice of re-building obsolete machine tools is just poor business. You just can't re-build the accuracy, speed, convenience, and production capacity of a modern space saving Sheldon Precision Lathe into the cumbersome shell of an old lathe of obsolete design.

First, you would have to build in "Zero Precision" Timken Taper Roller Bearings—there are no other bearings as accurate. You would have to bore a 1 5/8" hole thru the spindle to get Sheldon's capacity; and hold run-out accuracy within 0 to .0003". You would have to re-grind and scrape bed ways within tolerances of .001" per ft., and hold transverse ways and parallel alignment within .005"; and replace your lead screw with one cut on the latest Pratt & Whitney thread miller, etc., thru Sheldon's 18 accuracy tolerances . . . and still you would not have the efficiency of a fast, convenient, space-saving and power-saving Sheldon Precision Lathe, which you can buy today from your tool distributor, fully assembled and ready for work. Don't re-build, replace for efficiency! Write for Catalog

SHELDON
CHICAGO
Sheldon Machine Co. Inc., 4208 N. Knox Ave., Chicago 41, Ill.

BREVITY—Identify by IEN - 13146 If you write the maker

Here's the quick, easy, economical way to protect tubing, valves and wires from contamination and mishandling—use General Electric sealing caps and sleeves. These low-cost plastics seals safeguard small parts from dirt, air, moisture, chemicals and paint during fabricating, shipping and storage . . . say "Hands off!" to careless fingers.

G-E sealing caps and sleeves are easy to apply. Simply expand them in the dilating solution and slip them on; they quickly shrink to a tight fit. Tough and durable, yet easy to remove, they have excellent electrical properties, resist heat, moisture and chemicals, and are readily adaptable to assembly-line procedures. Widely used in the refrigerator industry to protect small tubing, they also serve as insulation for electrical parts and as protection for valves.

SEND TODAY FOR FREE BULLETIN!

General Electric Company
Section G-3, Chemical Division
Pittsfield, Massachusetts
Please send me your free bulletin on G-E sealing caps and sleeves.
Name
Business
Street
City
Zone State

G-E SEALING CAPS AND SLEEVES
Very Important Protection

*For less than 1¢ each in most sizes.

GENERAL ELECTRIC

"I WISH I HAD-"

An IEN reader is waiting for an answer to each item in this column.

This column concentrates upon reader requests for information on sources of supply for products or services or technical advice which we ourselves cannot supply, advises you of new patent-protected products for your possible manufacture, and available surplus of specialized products.

It is published to invite your suggestions and comments, which are forwarded immediately to the originator, just as we will be happy to publish similar problems for you.

ELECTRICAL DESIGN . . "I wish I had contact with a company requiring the services of a design engineer with 20 years of experience on electrical apparatus and equipment, mostly in the communication field. I am located at present in Massachusetts." **IEN W-86**

ENGINEER . . "I wish I had connections with a manufacturing firm that needs the services of a mechanical designer and registered patent attorney. I can bring with me several items suited for manufacture and sale. I desire to work on a salary and royalty basis. New York State." **IEN W-87**

ENGINEER . . "I wish I had contact with a manufacturing or construction firm requiring an individual with 25 years of administrative and engineering work in electrical, mechanical and structural fields. I am in Maine." **IEN W-88**

FILLING . . "I wish we had a machine to pack a canvas football dummy full of cotton waste and curled hair in our manufacturing operations." **IEN W-89**

MACHINE TOOLS . . "I wish we had a source of supply for a late Model No. 4 Warner-Swasey turret lathe and for a high-production multiple-spindle chucking machine. We are located in Ohio." **IEN W-91**

MANAGER . . "I wish we had contact with an individual whom we could employ as assistant factory manager for our plant employing 200 people and doing defense work. We also have first class peacetime possibilities. Ohio." **IEN W-92**

MANAGER . . "I wish I had contact with a manufacturing concern that needs a production or factory manager. I have had 12 years of experience covering wage incentives, methods, tooling and plant layout. I am 36 years old and am located at present in New York State." **IEN W-93**

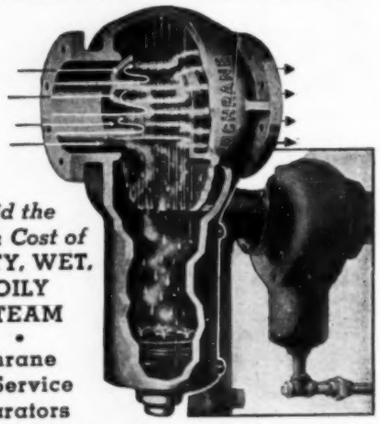
PRESS . . "I wish we had a source for a new or used multiple opening hot plate press with 7 to 20 openings for 4 by 8-ft. sheets to exert 700 to 1,000 lb. per square inch with a ram stroke of at least 3 feet. West Coast." **IEN W-94**

PROCESSING . . "I wish we had a machine to apply batter and breading to fish to be fried on a production basis. We are located in New England." **IEN W-95**

(Please turn to page 112)

BREVITY—Identify by IEN - 13148 If you write the maker

COCHRANE SEPARATORS



Avoid the High Cost of DIRTY, WET, OILY STEAM
•
Cochrane All-Service Separators

KEEP IT CLEAN AND DRY

Complete removal of moisture and solid entrainment from dirty, wet, oily steam, air and gases is assured with Cochrane Separators. Publication 2950 tells why.
COCHRANE CORP., 3152 N. 17th St., Philadelphia 32, Pa.

88 YEARS OF SERVICE
COCHRANE

BREVITY—Identify by IEN - 13149 If you write the maker

EXTRA SAVINGS

Cooler-Cleaner MACHINE TOOLS AND WORK

FULFLO COOLANT PUMPS

An installation by American Electric Fusion Corporation

Hard-to-get tools must be nursed like babies with production demands at all-time highs.

Keep 'em cool and turn out more and better work with proper coolants brought to the right spot by FULFLO COOLANT PUMPS.

Pipe sizes 3/8" to 1½". Motor, direct or belt drives.

WRITE NOW on your letterhead for your copy of FULFLO MECHANICAL DATA BOOK

THE FULFLO Specialties Co., Inc.
BLANCHESTER, OHIO

BREVITY—Identify by IEN - 13150 If you write the maker

WHEN *Split Second* PERFORMANCE IS ESSENTIAL..

USE *Paisley* RESIN ADHESIVES

THINK of having at YOUR command stable, *laboratory controlled*, prepared Liquid Resin Adhesives that *set in split seconds* . . timed to match machine motions with exacting mechanical precision! They will give you an entirely new conception of speed and efficiency in any packaging, labeling, sealing, fabricating or manufacturing operation.

Consider the following timely advantages of Paisley Resin Emulsion Adhesives. See why they will lend you powerful aid in speeding production and profits.

1. Stronger bonds to many difficult surfaces.
2. Machine cleaner, more dependably in glue applying equipment.
3. Non-inflammable, non-staining, non-injurious.
4. Made in any desired viscosity.
5. Super-speed, or slow setting, as required.
6. Excellent penetration . . far better than solvent cements.
7. Water resistance as required.
8. Resistant to fats, oils and many organic solvents.
9. Deposit higher solids than solvent solutions of same resin base.
10. Extremely efficient for joining porous to non-porous materials.
11. Economical . . production is speedier in many operations.
12. Unaffected by mold, insects, rodents.
13. Withstands temperature and humidity fluctuations.

TELL US YOUR NEEDS.. *do your gluing operations need greater speed, efficiency, or better quality output? Our Resin Adhesive Specialists will gladly recommend the ONE best Adhesive for the operation you describe. There's no obligation. Write TODAY!*

PAISLEY PRODUCTS INCORPORATED
DIVISION OF MORNINGSTAR, NICOL, INC.
1770 CANALPORT AVE., CHICAGO 16, ILL. ★ 630 W. 51st ST., NEW YORK 19, N.Y.
Manufacturers of Glues • Pastes • Resin Adhesives • Cements and Related Chemical Products

▼ BREVITY—Identify by IEN - 13152 If you write the maker ▼

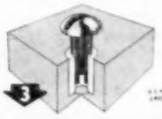
TAP-LOK INSERTS

prevent thread stripping in soft materials—

The unique self-tapping feature of TAP-LOK INSERTS substantially reduces assembly costs in continuous production, by eliminating a separate tapping operation. This method of increasing the shear area of tapped threads in softer-than-steel materials is fast and economical, consisting of three easy steps.

1 A simple driving tool with a threaded stud engages the interior threads of the insert until its shoulder contacts the top of the insert.

2 The driving tool then turns the insert into a cored or drilled hole equal in size to a tap drill hole for the insert's external thread. The insert cuts its own thread.



3 After the insert is seated, the main threaded member is driven into the interior thread of the insert.

Send for samples and descriptive folder.

•

Also manufacturers of Groov-Pins—for positive locking press fit.

GROOV-PIN CORPORATION

1129 Hendricks Causeway, Ridgefield, N. J.

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HIGH-CURRENT

TAP SWITCHES

COMPACT... DEPENDABLE

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Equipment manufacturers everywhere know that when they require high-current, non-shorting rotary tap switches, they can usually find just the right type and size in the Ohmite line. Ohmite tap switches are particularly designed for a-c use. They are extremely compact, providing up to 12 taps. Capacities range from 10 to 100 amperes a.c. In addition to the high-amperage, multi-point selector illustrated, Ohmite tap switches are available in open-type models, for both shorting and non-shorting applications. Ohmite is also prepared to supply open-type tap switches with special features—such as special angles between taps, and with up to 25 contact points. All Ohmite switches can be mounted in tandem for multi-pole operation.

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10 amp—150 v
15 amp—150 v
25 amp—300* v
50 amp—300* v
100 amp—300 v
*150 volts between taps

OHMITE MANUFACTURING CO.
4814 Flournoy St., Chicago 44, Ill.
Write on company letterhead for Engineering Catalog No. 40.

Be Right with OHMITE®

RHEOSTATS • RESISTORS • TAP SWITCHES

PRODUCT INDEX

How to find what you need:

Leaf through the issue with your current needs in mind, noting down those subjects that sound like solutions to your problems as you read the subject headings.

Next use this index to pick up page number references to additional sources on the subjects you have chosen. An asterisk (*) in the index after a number means editorial material.

Now take one subject at a time and refer to the pages you have noted. This time read the editorial descriptions and advertisements in detail. Then write the IEN numbers on which you want further information on your Reader Service Form to send to us, or write the manufacturer direct.

If you have trouble in finding the answer to your current problem through the subjects in this issue, let us know. We can name sources of supply with the help of our eighteen-year index of all products that have appeared in IEN. Any question we cannot answer will be published in our "I Wish I Had" column to invite suggestions.

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This is the first and only successful dust control chuck. Its operation is easy to understand and use. One pinion (see center of chuck body above) moves jaws in or out to grip work—just like any scroll chuck. 4 opposed screws (only two can be seen in photo) work on the chuck adapter to bring work to dead center. Even dubs have sentered work within .0005 in 3 minutes! Once set dead true, hundreds of duplicate parts can be machined without changing adjustment—by simply using the scroll control.

.0005 PRECISION

In 1 MINUTE!

Fastest chuck in the world!

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Those are just some of the features of this new kind of chuck. They are unbelievable—but TRUE! Send for literature—see for yourself!

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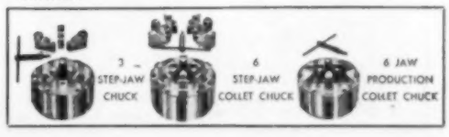

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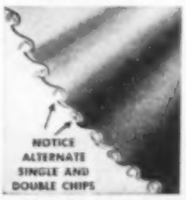
If so, let us give you SOUND, SOLID REASONS for using the MOTCH & MERRYWEATHER Triple-Chip Saw Blade



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PENTON BUILDING • CLEVELAND 13, OHIO
COMMAND OUR UNPARALLELED EXPERIENCE IN CIRCULAR SAWING

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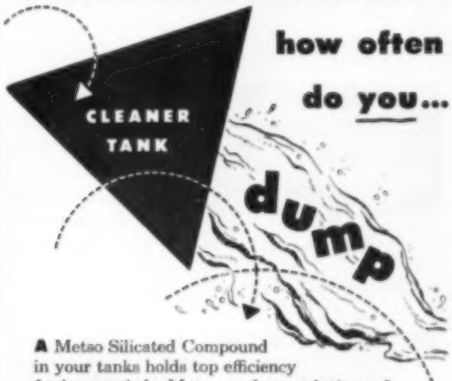

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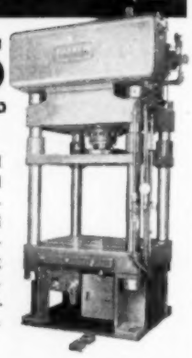

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Pneumatic Presses • Hydraulic Riveters • Air Control Valves

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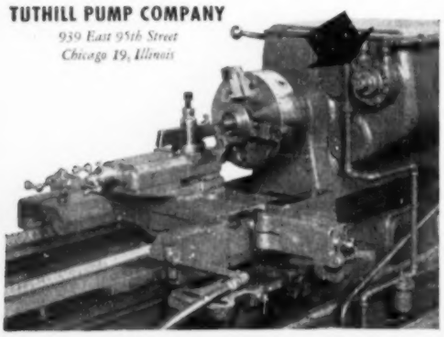

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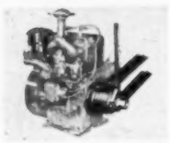
"ball-lok" V-Belt Clutch



Only the "Ball-Lok" Clutch Has No Friction Plates!

Eliminates heating and grabbing. Permits higher speed operation. Saves belts. Adapted to all V-belt clutching problems. No adjustments necessary. Send us your questions.

POWER TRANSMISSION HOUSES — This clutch is becoming an "essential" in your line.

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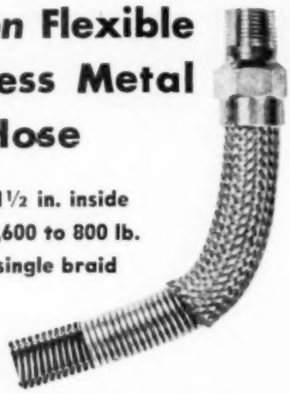
Johnson Flexible Seamless Metal Hose



¼ to 1½ in. inside
Rates 2,600 to 800 lb.
with single braid

Ask for Bulletin J-2

Deep convolutions provide for extreme flexibility.

Made of brass, bronze, carbon steel, stainless steel alloys.

Standard or special fittings available for hot or cold service.

JOHNSON METAL HOSE INC.
P. O. Box 952 Waterbury 20, Conn.

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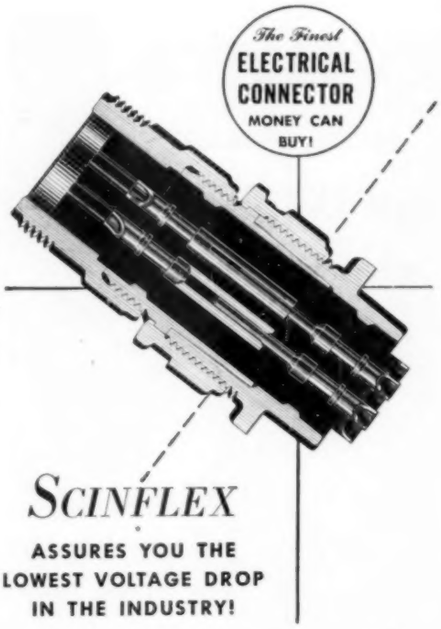

SCINFLEX

ASSURES YOU THE LOWEST VOLTAGE DROP IN THE INDUSTRY!

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• Moisture-Proof • Radio Quiet • Single Piece Inserts • Vibration-Proof • Light Weight • High Insulation Resistance • High Resistance to Fuels and Oils • Fungus Resistant • Easy Assembly and Disassembly • Fewer Parts than any other Connector • No additional solder required.

BENDIX SCINFLEX

ELECTRICAL CONNECTORS

Bendix

SCINTILLA MAGNETO DIVISION of SIDNEY, NEW YORK

Bendix AVIATION CORPORATION

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3 Spray Cleaners

that reduce pressure cleaning to a routine operation

SC-2-E is a water-solvent emulsion that performs better than straight solvents, can be operated continually without any redeposition from the bath, provides positive cleaning and long life.

SC-4 is in the classification of high alkalinity materials buffered for use on non-ferrous metals . . . equally adaptable to steel.

SC-9 provides the advantages of both alkali and solvent emulsions.

Within the scope of these three spray cleaners, you will find the answer to any pressure cleaning problem. Compare the cost of these products with any other cleaning method. Whether your operation is a single stage or a multiple cleaning sequence, you will find these products equally economical and effective. Ask the Northwest man in your area for his recommendation or write to us for complete information.

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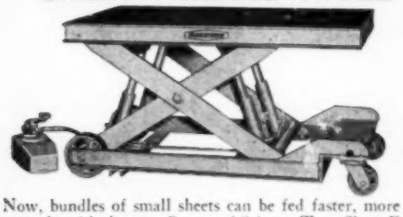
NEW WAY to FEED *Thick* BUNDLES of SHEETS

RAYMOND

Hydraulic Scissors-Type

SHEET FEEDING TABLE



Now, bundles of small sheets can be fed faster, more accurately with the new *Raymond* Scissors-Type Sheet Feeding Table.

Only 66" long, it has a scissors-type lifting mechanism that elevates the top from 18" to 36", enabling it to hold thick bundles for feeding. Top can't sag under off-center loads because it's supported at four points by Hydraulic rams.

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FREE BULLETIN. Send for Bulletin 261, Supp. 3—it gives complete details.

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Formerly LYON-Raymond Corporation

ELECTRIC INDUSTRIAL TRUCKS • HYDRAULIC ELEVATING EQUIPMENT

The RAYMOND CORPORATION

3555 SpaceMaker St., Greene, N. Y.

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(Continued from page 108)

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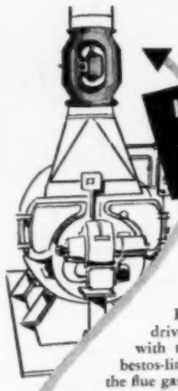

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